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Intelligence Handbook

Special Operations

GUATEMALA

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INTELLIGENCE HANDBOOK
FOR
SPECIAL OPERATIONS
GUATEMALA



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FOREWORD

The Handbook for Special Operations is designed to meet the needs of those engaged in planning operations relating to insurgency situations. The Handbook is not designed for support of any specific operation. It is intended to supply basic essentials to which can be added more specific and more current details immediately prior to any operation. Although the Handbook stresses knowledge needed for special operations, it will also prove valuable as a basic guide to Guatemala.

The information included emphasizes geographic and ethnographic data which would affect small land, air, and maritime groups. Related information concerning survival, transportation, and communication facilities is covered in some detail. Background data on politics, history, and military forces is given for the reader's orientation.

The NIS General Survey, Guatemala, August 1965 and current reports were used in preparation of the Chronology and Chapters V and IX (Politics and Government, and Military and Internal Security Forces); it and other NIS chapters should be referred to for additional background information. For NIS chapters available, see the NIS Production Status Report.

The cutoff date for material contained in the Handbook is 31 May 1967.

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I. Introduction

Guatemala, currently confronted with guerrilla warfare in the countryside and terrorism in its capital, has been a prime target for Communist subversion for over a decade. It is the most populous Central American country, is located on Mexico's southern border, and has coastlines on both the Caribbean Sea and the Pacific Ocean. This location places it close to vital American sea lanes.

Except for brief periods, Guatemala in its international posture has been a strong supporter of the United States. It has been one of the most outspoken countries in Latin America against Castro-Communism, so much so that in 1961 its government permitted Guatemalan bases to be used for the abortive US-backed invasion of Cuba.

Guatemala's relations with the other Central American republics are normal, but recurring difficulties with Mexico over border incidents and violations of territorial waters stimulate tension from time to time. Guatemala's traditional claim to British Honduras also causes friction with Great Britain. Once the seat of the Spanish colonial government in Central America, Guatemala has had pretensions to leadership in Central America. It has led the movement for isthmian federation and economic integration and has been active in the Organization of American States and the United Nations.

Guatemalan politics have been characterized by a continuous oscillation between conservatism and liberalism, between dictatorships and revolutions. The people are lacking in knowledge about or experience in political processes and are generally apathetic; their willingness to follow a demagogue encourages opportunism and unscrupulousness among Guatemalan politicians.

The inexperience and venality of Guatemala's leaders aided Communist penetration and ultimate control of the 1944 popular revolution. From 1951 to 1954 the Communist party in effect ran the country. Although they were removed in June 1954, their influence has not been eliminated.

The armed forces number about 9,750, and the national police agencies about 5,000. Although inadequately trained and equipped, they are capable of maintaining order under normal conditions but are incapable of controlling large-scale prolonged guerrilla operations. They have become increasingly effective in their efforts to eliminate the small-scale insurgency that has plagued the government for

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several years. The army and police sponsored clandestine counterterrorist campaign waged against both urban and rural insurgents was particularly effective in mid-1967. The armed forces are strongly anti-Communist, and its higher ranking officers appear to be working for general social progress.

The major social characteristic of Guatemala's 4.5 million people is the cultural division between two ethnic groups, Indian and non-Indian, and two classes, poor and wealthy. The Indians, bound by religious practices and social custom to a backward traditional way of life, are a subservient majority without political capability or influence. The wealthy, concerned almost exclusively with the preservation of their status, show interest mainly in exploiting a working class that is poorly organized, is on the defensive, and lacks the time, energy, or ability to do more than struggle for survival. This cultural and social pattern, which disregards public interest, is a major deterrent to economic progress.

The country, well-endowed by nature, has realized little of its potential and is becoming overpopulated. Heavy foreign aid and investment, primarily from the United States, have improved facilities necessary for development, although growth is retarded by shortages of human skills, electric power, and communications. Most Guatemalans, both Ladinos and Indians, remain illiterate, malnourished, poorly housed, and unemployed or underemployed.

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II. Historical Background

A. Chronology

This chronology is essentially the chronology to be found in the NIS General Survey, Guatemala, August 1965.

- 1524 Pedro de Alvarado conquers the territory of Guatemala for Spain.
- 1542 Audiencia of Guatemala is established and, during the colonial period, becomes a captaincy general including all of Central America.
- 1821 Guatemala declares independence from Spain and joins the Mexican empire.
- 1823 Guatemala breaks from Mexico and becomes part of the Central American Federation.
- 1839 Guatemala becomes an independent state; officially declares itself a republic in 1847.
- 1839-1944 Guatemala is ruled by dictatorships, principally by: Rafael Carrera (1838-1865), Justo Rufino Barrios (1873-1885), Manuel Estrada Cabrera (1898-1920), and Gen. Jorge Ubico (1931-1944).
- 1944 Dictator Ubico overthrown.
- 1945 Juan Jose Arevalo inaugurated as Guatemala's first freely elected president.
- 1950 Col. Jacobo Arbenz elected president; inaugurated March 1951.
- 1952 Communist party changes name to Guatemalan Labor Party (PGT) and registers officially as legal party.
- 1954 On 15 May, 2,000 tons of weapons arrive from Soviet Bloc. Anti-Communist group of about 200 men, led by Col. Carlos Castillo Armas, invades Guatemala and ousts Arbenz in June. PGT and Communist fronts outlawed. Armas inaugurated as President in November.
- 1956 Constitutional government is restored with installation of Congress and promulgation of a new constitution.

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- 1957 President Castillo Armas assassinated in July; Luis Arturo Gonzalez succeeds to presidency. In October, mob action forces Gonzalez's resignation; military junta takes over; mobs force junta out; Congress names second presidential designate, Guillermo Flores Avendano, as interim president and annuls October elections.
- 1958 Miguel Ydigoras Fuentes is elected president in January.
- 1959 Guatemala in December accuses Cuba before OAS of helping the Communists to prepare an invasion of Guatemala.
- 1960 Guatemala severs diplomatic relations with Cuba in April.
- 1961 Guatemalan bases used for abortive US-backed invasion of Cuba.
- 1963 Government declares state of siege in March following a wave of terrorism; return of Juan Jose Arevalo precipitates a military coup; Col. Enrique Peralta Azurdia heads provisional military government. Peralta government breaks relations in July with the United Kingdom over Guatemalan claims to territory in British Honduras.
- 1964 State of siege is lifted in March. Constituent Assembly is elected in May and charged with writing a new constitution and preparing complementary laws. In July the Constituent Assembly abrogated the 1956 constitution and legalized the military government.
- 1965 Members of Rightist National Reformist Movement (MRN) arrested in January for alleged plotting against government. Following urban terrorist attacks in February a state of siege is reimposed. Numerous leftists exiled. Approximately 30 Communists arrested in March. Schedule for return to constitutional government announced in June and the state of siege ended in July.
- 1966 National elections take place in March in calm atmosphere. Julio Cesar Mendez Montenegro inaugurated as president on 1 July. Amnesty decree of 27 July covering all political crimes committed between 1 November 1960 and 26 July 1966 rejected by Communist guerrilla groups. Guerrillas resume terror campaign in August.

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Government begins large-scale field operations against guerrillas in October. State of siege reimposed on 3 November because of extent of terrorist activity and sabotage of electric power plant near Guatemala City. Vice Minister of Defense and three other army officers exiled on 12 November for attempting to stage a coup.

1967 Rebel Armed Forces (FAR) increase urban terrorism in February.

In midyear special counterterrorist squads operating clandestinely under army and police sponsorship were taking a heavy toll among insurgents and leftists in general.

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B. History

Since the European conquest of the new world, Guatemala has been a colony of Spain (1524-1821), a part of the Mexican empire (1822-23), a state in the Central American Federation (1823-47), and an independent republic (since 1847).

The territory which is now Guatemala was inhabited at the time of the European conquest by a sedentary, agricultural, highland people of Mayan stock organized in tribes headed by "kings" who frequently warred on each other. For reasons not definitely established, the brilliant Mayan culture, which once flourished in the tropical forests, had already declined, and the magnificent cities were deserted.

Guatemala was conquered (1524) by Pedro de Alvarado, one of the principal officers of Hernán Cortés, who was sent from Mexico in command of a force of Spaniards and Indian allies. The conquest completed, Alvarado was appointed the first captain general of an area which included modern Central America and the adjacent portions of contemporary Mexico. The colony was organized in the typical Spanish pattern. The conquerors were assigned lands and Indians to support them. The capital was eventually established at Antigua, and Spanish officials, subject in some matters to the Viceroy of Mexico but in local affairs independent, were appointed to administer the area. The capital achieved a certain magnificence and the major towns acquired some aspects of Spanish culture, but the outlying areas were only lightly affected by Spanish domination. When Antigua was razed by an earthquake in 1773, the capital was moved to the site of modern Guatemala City.

The colony developed no great degree of economic prosperity, internal transportation was difficult, and pirates harassed the coasts and preyed on shipping. The cultivation for export of agricultural staples, principally cacao and indigo, by Indian or Negro labor was the major economic activity. Commerce was not extensive and a satisfactory port was not developed.

Successful termination of the war for independence in Mexico led to a declaration in Guatemala City of Central American independence from Spain on September 15, 1821. Shortly thereafter, the former captaincy general, which included the territory of the modern republics of Guatemala, El Salvador, Honduras, Costa Rica, Nicaragua, and Chiapas state (Mexico), joined the empire which Agustín de Iturbide proclaimed in Mexico. When Iturbide fell from power in 1823,

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Central America determined upon separate nationhood, and the Republic of the United States of Central America (Central American Federation) was formed with its capital in Guatemala City.

The federation had a brief and stormy life. Manuel José Arce, the first president, came into conflict with liberal groups in Guatemala and El Salvador and was overthrown (1829) by a military force under Francisco Morazán. Morazán's government attempted to carry through a reform program, one feature of which was subordination of the church to civil authority. The rapid and drastic changes produced a reaction which threw the union into civil war, and by 1838 the federation had, for practical purposes, ceased to exist. The Guatemalan government functioned independently after 1839. Morazán was defeated decisively and exiled in 1840, and his attempt to regain power in 1842 ended in his execution.

The principal factor in the overthrow of Morazán was the back-country uprising in Guatemala of which Rafael Carrera assumed leadership. This astute but illiterate rustic established himself as the military arbiter of the state (1838) and controlled policy until his death in 1865. The formality of elections was dispensed with in 1854 when the presidency was conferred upon him for life. He completely dominated the political life of Guatemala during the mid-nineteenth century.

Carrera, with the support of conservatives, returned Guatemala to a regime similar to that which had prevailed during the colonial period. He restored the church to its position of privilege and power and catered to the aristocracy. He followed a nationalistic policy and in March 1847 formally declared Guatemala an independent and sovereign nation. In 1859 he made a treaty with Great Britain defining the status and boundaries of British Honduras (Belize), the interpretation of which is still an issue between the two governments.

In 1871 a revolution headed by Miguel Garcia Granados and Justo Rufino Barrios overthrew Gen. Vicente Cerna, Carrera's successor in office, and inaugurated a period of liberal ascendancy that extended almost unbroken to 1944. After a brief period in the presidency, Garcia Granados ceded to Barrios (1873), who became known as "The Reformer" because of the sweeping changes he introduced.

With the approval of the assembly, Barrios broke the power of the aristocracy; brought the church under civil control and confiscated its properties; instituted lay

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education; promulgated a new constitution (1876); fostered the construction of improved means of communication including roads, railways, and telegraph lines; encouraged development by private initiative of the resources of the country; and opened the country to foreign capital. He stimulated the cultivation of coffee to replace the declining trade in cochineal, and tightened labor laws to assure producers of a ready supply of labor. He was an ardent exponent of the idea of Central American union and, when persuasion failed to produce the ends he desired, invaded El Salvador and lost his life at the battle of Chalchuapa (1885).

After the death of Barrios, Manuel Lisandro Barillas occupied the presidency. He was succeeded in 1892 by José María Reina Barrios, nephew of "The Reformer", who was assassinated in 1898. Manuel Estrada Cabrera became provisional president, regularized his status by an election and by repeated re-elections (1904, 1910, 1916) maintained himself in power until leaders of the opposition party forced him from office by having the assembly declare him insane (1920).

During his long tenure in power, Estrada Cabrera fostered economic development and progress along the lines established by Barrios. He encouraged improvements in agriculture, continued to build roads, supported railroad construction, and had the satisfaction of seeing the railroad to the Atlantic completed. His political policies were less admirable. He persecuted political opponents, disregarded individual rights and liberties, muzzled the press, and summarily disposed of his enemies.

After the fall of Estrada Cabrera, the presidency was held for periods ranging from a few days to nearly a full six-year term by half a dozen men whose tenures in office were undistinguished.

In 1931 Jorge Ubico was elected president and began the fourth of the extended dictatorships that covered a century of Guatemalan history. Ubico stressed economic development and, in particular, improvement and diversification of agriculture and the construction of roads. He balanced the national budget and transformed a deficit into a surplus. In part his financial achievement was due to economies, in part to the efficiency and honesty of his administration. Although his vagrancy law (1934) made workers, especially Indians, liable to periods of forced labor at critical seasons, Ubico's paternalistic policies toward the natives established him as their patron.

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During his motorcycle tours of the country, or in his office, he listened to their complaints and dispensed immediate "justice".

Latent sources of opposition were solidified and focused by the increasing disregard which the dictator showed for individual rights and liberties. The familiar trappings of military dictatorship became increasingly evident, and the reorganized national police came to be regarded as a secret police. Protests were answered by sterner restrictions and violence. Discontent was increased by economic dislocation during World War II and by the unfavourable contrast between the idealistic pronouncements of Allied war leaders and conditions in Guatemala. Guatemala declared war on Japan on December 8, 1941 and on Germany and Italy on December 11, 1941.

In June 1944 a general strike forced Ubico to resign. Labor was allowed to organize, political parties were formed, and a presidential electoral campaign was begun in which Juan José Arévalo emerged as the most popular candidate. When Gen. Federico Ponce Vaides, head of the interim government, gave indications that he intended to maintain himself in power, he was ousted in October by a popular uprising headed by students and teachers, workers, and younger elements of the military. A revolutionary junta presided over the drafting of a new constitution, the electoral campaign, and the inauguration in March 1945 of Arévalo, the successful candidate.

The Arévalo administration consolidated the social revolution of which the October uprising had been an expression. An equitable labor code was enacted, and a social security system was inaugurated which promised progressive extension of benefits. Under this legislation, urban labor increased in strength and organization of agricultural workers began. Public school education was expanded and improved, teachers' salaries were increased, and the university was granted autonomy. These measures were tangible evidence of the intent of the administration to place the instruments of culture within reach of the masses.

In many respects Arévalo manifested the nationalism inherent in the revolution of October. He pressed the Belize issue with Great Britain, subjected foreign enterprises to regulation, and attempted to guarantee to Guatemalan laborers a larger share of the benefits produced by their toil. The policies followed by Arévalo consolidated the revolutionary elements of 1944 into a politically effective group prepared to support any government of like orientation.

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Thus, the revolution and the Arévalo regime accomplished the transfer of political power in Guatemala from the military to a popular group dominated by labor.

Guatemalan Communists turned this development to their advantage. Lack of labor leaders from the rank and file allowed Communists to organize the labor movement and use it for their own ends. Arévalo was not friendly to their activities, but his nationalistic bent gave them an opportunity to establish themselves as his most enthusiastic and reliable backers. In this fashion they won a degree of toleration which permitted them to operate.

The most likely candidates to succeed Arévalo were Francisco Arana and Jacobo Arbenz Guzmán, but Arana was assassinated. Arbenz Guzmán became the official candidate, was elected with Communist support over Gen. Miguel Ydígoras Fuentes, and assumed office in March 1951. Arbenz Guzmán made agrarian reform the central project of his administration. With strong Communist support, the assembly passed a measure providing for the expropriation of unused portions of landholdings in excess of a specified acreage and the distribution of the land, title to which remained with the government, among landless peasants. Most sober observers admitted that land reform was necessary, but many criticized specific details of the Arbenz Guzmán law and the fact that administration officials made it less an instrument for achieving reform than a weapon against the interests and the classes they wished to destroy.

The growth of Communist influence in Guatemala became the most controversial issue of the Arbenz Guzmán regime. The president's toleration allowed the party to operate openly and individual Communists to hold key posts in government, official agencies, and organized labor. In the minds of many individuals, the crucial issue was not social reform but Communist domination of Guatemala. Internal opposition to the trend was eventually stifled by terrorism, but exiles and foreign recruits headed by Col. Carlos Castillo Armas planned outside the country to overthrow the government. When they struck, military officers informed Arbenz Guzmán that the army would not fight in his defense and forced him to resign (June 1954).

Castillo Armas emerged from a military junta as provisional president in September, and a plebiscite subsequently regularized his status. His attempts to extirpate Communist influence, moderate the extreme social reforms inaugurated by his predecessors, and restore the confidence

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of foreign investment capital were cut short when he was assassinated in the presidential palace by one of his guards (July 26, 1957). After two temporary governments, and an election which was nullified by the assembly, Ydigoras Fuentes (National Democratic Reconciliation Party) was elected president and took office March 2, 1958.

Ydigoras' tenure was beset with civil disorders, attempted coups, and the beginning of guerrilla warfare. Political exiles were permitted to return to Guatemala. Serious trouble arose with the possibility that Juan José Arévalo might take advantage of the amnesty to return to Guatemala and run for the presidency. Widely circulated and accurate reports of Arévalo's return so alarmed the military that it seized control of the government on March 30, 1963.

Col. Enrique Peralta Azurdia, the new chief of government, had served as Minister of Defense since 1960. Upon ousting Ydigoras, Peralta suspended the constitution, dissolved the congress, and ordered all political activity halted. Peralta ruled the country by decree and the state of siege was frequently invoked during his three-year tenure. Elections for constituent assembly were called in May 1964, and the assembly was charged with writing a new constitution and complementary laws.

On March 6, 1966, national elections were held, and on July 1st, Julio Cesar Mendez Montenegro and Clemente Marroquin Rojas of the left of center Revolutionary Party were inaugurated as president and vice president respectively.

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III. Physical Geography

A. Introduction

Guatemala, the third largest of the six Central American Republics, occupies slightly more than 42,000 square miles. Its maximum dimensions are about 280 miles north to south and about 250 miles east to west. Located in the northernmost part of the Central American Isthmus, it is bounded by British Honduras to the northeast, by Mexico to the north and west, and by Honduras and El Salvador to the southeast. The country has both a Caribbean and a Pacific seacoast. The short Caribbean coast -- 85 miles -- is quite irregular and characterized by deep embayments; in contrast, the longer Pacific coast -- 165 miles -- is relatively straight.

Within a small area Guatemala exhibits an exceptional degree of physical diversity. Its major geographical divisions -- the Central Highlands Region, the Pacific Lowlands Region, the Caribbean Lowlands Region, and the Petén Lowlands and Hills Region -- include rugged mountains, volcanoes, high plateaus, arid hills, and rain-drenched lowlands. See Map 56206 for the delimitation of geographic regions in Guatemala.

The Central Highlands Region constitutes roughly one-half of the country; within it are mountains, volcanoes, plateaus, and intermontane valleys. The southwestern part of the region is crossed by a chain of volcanoes, located about 30 miles inland from the Pacific coast. Peaks in this chain rise to 12,000 feet and more. A high plateau is situated toward the interior from the line of volcanoes. The more important urban settlements, including Guatemala City, are located here in a series of fertile basins and valleys. The plateau is drained by short, swift streams flowing to the Pacific and by longer streams of more gentle gradient to the Caribbean. It is separated from the east-west trending ranges to the north by the Río Motagua Basin.

Broad, gently sloping plains stretch from the foot of the Sierra Madre range to the ocean in the Pacific Lowlands Region. On the opposite side of the country, in the Caribbean Lowlands Region, the coastal plain is narrow and rimmed by hills; however, it opens inland along river valleys that reach far into the interior.

The Petén Lowlands and Hills Region occupies the northern part of the country. It is a vast undulating plain, with scattered hills and extensive forests.

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B. Central Highlands Region

1. General

The Central Highlands of Guatemala, viewed broadly, are a link in the great mountain chain that extends along the Pacific side of the Americas. They constitute one of the most physiographically complex landmasses in the entire Western Hemisphere and include the highest and most rugged terrain in Central America. The fertile valleys and high-land basins of the region are the most densely populated areas of Guatemala.

The highlands consist of two major mountain systems separated by the valley of the Río Motagua -- the Antillean to the north and the Pacific Cordillera to the south. The Antillean system forms two great concentric mountain arcs swinging across Guatemala from west to east. The northernmost of these arcs is bisected by the northward-flowing Río Salinas (also known locally as the Río Chixoy or Río Negro). The western sector, the Sierra de los Cuchumatanes, mostly in the department of Huehuetenango, is very high and rugged; the eastern sector, including the Sierra de Chamá in the departments of El Quiché and Alta Verapaz and the Sierra de Santa Cruz in the department of Izabal, is lower and somewhat more subdued. The southern arc of the Antillean system consists of the Sierra de Chuacús, the Sierra de las Minas, and the Montañas del Mico -- an almost continuous chain of rugged mountains extending from the department of El Quiché eastward across the country to the department of Izabal.

The other major mountain system of Guatemala, the Pacific Cordillera, is the backbone of the country and the water divide between Pacific and Atlantic drainage. It includes the volcanic Sierra Madre range in which the Tajumulco Volcano reaches 13,845 feet, the highest elevation in Central America.

2. Subregions

a. Sierra de los Cuchumatanes

(1) Terrain and Climate

The Sierra de los Cuchumatanes includes the most extensive high areas in the country. Isolated peaks in the Sierra Madre range to the south reach higher elevations, but the elevation of the Cuchumatanes as a whole is greater. Most of the high, bleak plateau areas of the Sierra de los Cuchumatanes are at elevations in excess of 7,000 or 8,000

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feet, and the mountain peak of Xémal (Chemal) in the department of Huehuetenango reaches 11,870 feet.

The Sierra de los Cuchumatanes is cut by deep gorges and steep-sided valleys. It is drained northeastward by the Río Cocolá, Río Xalbal, Río Cotzal and other tributaries of the Río Usumacinta and northwestward by the Río Nentón and other tributaries of the Río San Miguel in Mexico.

Karst topography, characterized by sinkholes and underground drainage in limestone, is developed extensively on the northern flanks of the Sierra de los Cuchumatanes. The southern margin of the Sierra drops off sharply to the valleys of the Río Salinas and its tributaries, which flow to the east, and to the valleys of the westward flowing Río Selegua and Río Cuilco.

A roughly triangular mountainous tract, the Montañas de Cuilco, although a part of the subregion, is separated from the Sierra de los Cuchumatanes proper by the valley of the Río Selegua (see Figure 1). The southern face of the Montañas de Cuilco presents a steep slope of some 7,000 feet down to the valley of the Río Cuilco. The highest peak in the Montañas reaches an elevation of 11,140 feet.

Except for the lower valleys, most of the Sierra de los Cuchumatanes experiences cool temperatures the year round because of the high elevation; freezing occurs occasionally above 5,000 or 6,000 feet during the dry season, November through April. July is usually the rainiest month for most of the subregion; Todos Santos Cuchumatán, at 8,000 feet, receives about 20 inches during this month alone. Average annual precipitation for the area overall is roughly 80 inches, with the greatest concentration falling on the valley of the Río Cocolá to the north and considerably less toward the west. Rain falls in the subregion about 150 to 180 days per year.

(2) Vegetation and Land Use

Coarse grass and rather thick stands of pines cover the lower slopes of the Sierra de los Cuchumatanes. At higher elevations, in the cool, foggy, undulating summit areas, scattered pines or other trees are interspersed with rolling meadows. Small farms are located on any reasonably level valley lands at lower elevations, and sheep grazing is important throughout the subregion; therefore chance encounters with farmers or herdsmen are common.

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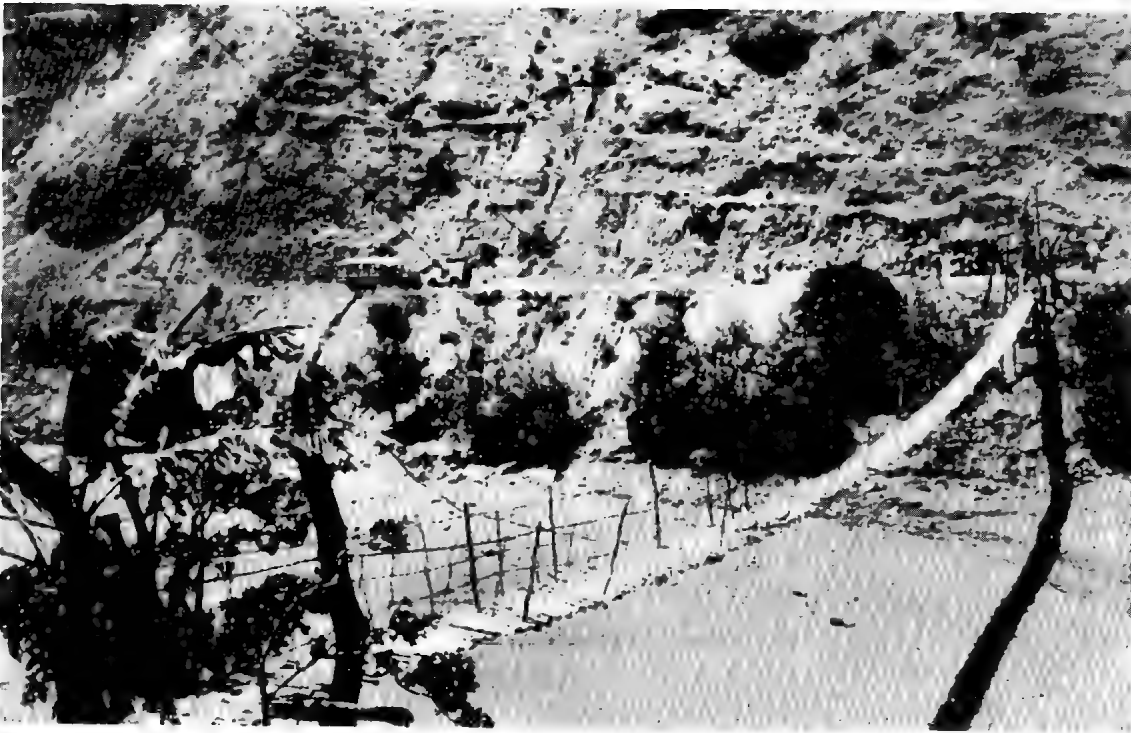


Figure 1. Steep slopes along Río Selegua valley. Note the typical suspension footbridge.

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b. Sierra de Chamá - Sierra de Santa Cruz

(1) Terrain and Climate

The Sierra de Chamá, an eastward continuation of the Sierra de los Cuchumatanes, stretches across the department of Alto Verapaz. It is separated from the Sierra de los Cuchumatanes by the Río Salinas which flows northward to form part of the Guatemala - Mexico boundary. The highest elevation in the Chamá range is an 8,600-foot peak located near Pancajché in the southern part of Alta Verapaz. The concave side of this crescent-shaped range faces the lowlands of El Petén to the north and consists of a vast karst area with underground drainage, sinkholes, caves, and -- to the north -- numerous rounded, knoblike hills. The southern flanks of the range are drained to the east by the Río Cahabón which joins the Río Polochic flowing into Lago de Izabal.

Farther to the east lies the Sierra de Santa Cruz, the easternmost extension of the northern range of the Antillean mountain system. It stretches across the whole northern half of the department of Izabal. The highest point in the range is about 8 miles north-northwest of El Estor and reaches an elevation of about 3,967 feet. As is the case throughout much of the Antillean system, the northern face of the Sierra de Santa Cruz is characterized by karst topography. Surface drainage is better developed along the southern face of the range where it flows into Lago de Izabal.

Cold temperatures are less common in the Sierra de Chamá and the Sierra de Santa Cruz than in the higher mountains to the west, and the annual precipitation, perhaps 100 inches, is slightly greater. Usually about 180 days out of the year have rainfall. Rainfall is heaviest in July when warm moist airmasses flow into the area from the Caribbean. Most of the area has a dry season from January through May and a wet season from June through December, with a period of somewhat decreased precipitation in August.

(2) Vegetation and Land Use

Typical rain forest, with broadleaf trees including mahogany, palms, tree ferns, and many other species, once covered practically the entire subregion. Much of the original forest cover has long since been removed from areas that are now under cultivation, but in the remaining areas of native forest the canopy of the dominant trees is

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very dense. Many trees in the forest stand well over 80 feet high and support an abundance of parasitic vegetation and climbing vines. In many places the underbrush is almost impenetrable. All but the most precipitous slopes and rocky peaks have been cleared for cultivation, and forests on the steep-sided hills contrast sharply with the surrounding cultivated slopes and valley bottoms. In the less humid parts of the Sierra de Chamá, pines are the dominant trees, and the underbrush is much less dense. The central section of the valley of the Río Cahabón, 15 to 30 miles downstream from Cobán, is covered with tall grass and scattered pines. Many large coffee plantations are located in the subregion in the vicinity of Cobán and Pancajché. The Indians grow maize and other crops for local consumption on small farms, some of which are located on incredibly steep slopes (see Figures 2 and 3).

c. Sierra de Chuacús - Sierra de las Minas
- Montañas del Mico

(1) Terrain and Climate

This subregion, one long mountain chain that arcs across the central part of the country, is divided into three sections.

The Sierra de Chuacús extends across the southern part of the department of El Quiché, south of the Río Salinas, and across the department of Baja Verapaz. Peaks in this part of the range rise to 8,000 feet or higher.

Continuing eastward, the range is known as the Sierra de las Minas. The crest of the Sierra de las Minas forms part of the boundary between the department of Zacapa to the south and the departments of Alta Verapaz and Izabal to the north. This is the highest and most rugged part of the long mountain chain. Mountains in this section rise to elevations of over 9,000 feet, and the highest peak is about 10,300 feet; slopes are cut by numerous steep-sided valleys. The depth of these valleys, the steepness of their slopes, and the usually damp clay and lime soils make much of this area impassable and the construction of even simple paths very difficult. Coffee grown on the small fincas that occupy the slopes midway between the crest of the Sierra de las Minas and the Río Polochic can be brought out only on muleback.

The third range -- the Montañas del Mico -- lies between Lago de Izabal and Río Dulce to the northwest and the valley of the Río Motagua to the southeast. The highest point in the Montañas del Mico is the peak of Cerro San Gil, which rises to about 4,157 feet.

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Figure 2. Precipitous cornfield above small Indian village in Alta Verapaz.



Figure 3. Farmers planting seed with dibble stick on steep slope.

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Annual average temperatures for the subregion range from about 60°F in the higher elevations of the western section to about 80°F in the lower eastern section. Throughout the subregion temperatures vary with altitude, and the higher slopes of the Sierra de las Minas, for example, are quite cool. Rainfall also increases from west to east, with less than 40 inches falling annually in the extreme west to over 80 inches in the east. The western section has a pronounced winter dry season from November through April, whereas the eastern section is rainy the year round with precipitation decreasing only slightly in February, March, and April.

(2) Vegetation and Land Use

The Sierra de Chuacús has a relatively thin forest cover of pine and oak. Moving downslope northeastward to the valley of the Río Salinas and southeastward to the valley of the Río Motagua (Río Grande), the forest grades into drier types of vegetation, with scrub and cactus at lower elevations. In the Sierra de las Minas, dense forest is almost continuous on the higher slopes, and at a distance trees mask the steep escarpments and ravines that make movement so difficult in this area. The woods also cover many of the higher peaks and isolated knolls that rise here and there above the ridge-line. At these higher elevations, thick cushions of moss cover the ground, hiding rock fissures and depressions and making walking difficult and dangerous. On the lower slopes of the northern side of the Sierra de las Minas the vegetation grades into the rain forest of the valley of the Río Polochic, whereas on the southern slopes it grades into the dry scrub and cactus of the Río Motagua valley. The Montañas del Mico are covered almost entirely by dense rain forest although there are occasional fields of shifting cultivation. Small farms are scattered throughout the subregion at all but the highest elevations.

d. Western Sierra Madre

(1) Terrain and Climate

Towering volcanoes are the dominant feature of the Sierra Madre, and the volcanoes of the western section are the highest in the range. Tajumulco Volcano, not far from the Mexican border, reaches 13,845 feet. Volcanoes rise in file along the southwestern margin of a broad, high plateau, the general elevation of which is about 7,000 to 9,000 feet (see Figure 4). The northern flanks of the plateau consist of lower, more rounded mountains. The high plateau itself is partially dissected by deep canyons,

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Figure 4. Chain of volcanic peaks of Sierra Madre range.
View west from near Guatemala City.

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and there is little flat terrain; most of the surfaces are rolling to steep. An exception is the fairly extensive and level basin around the town of Quezaltenango in the center of the subregion. At the southeastern end of the subregion, set among soaring volcanoes, is a deep lake, Lago de Atitlán, the second largest in surface area in the country (see Figure 5).

Temperatures in the subregion are generally fairly cool, except on the lower slopes of the mountains facing the hot Pacific lowlands. At higher elevations, above 8,000 feet, freezing temperatures may occur during the dry season, November through April. In general, annual precipitation ranges from about 175 inches on the higher Pacific slopes to 50 inches or less in the interior. Sea breezes moving up the steep slopes account for the concentration of precipitation on the Pacific side of the mountains. Considerable fogginess occurs above elevations of about 5,000 or 6,000 feet along the Pacific slopes and down to approximately 8,500 feet along the lee side of the mountains. Interior basins are frequently filled with fog in the early morning hours.

(2) Vegetation and Land Use

The very highest slopes and peaks within the Western Sierra Madre are barren. Downslope from these barren areas scattered scrub vegetation grades into open pine forest at about 11,000 feet. Trees at this level are widely spaced and provide little concealment. Passage through them presents no problems. Farther downslope pines become mixed with oaks and herbaceous undergrowth, which becomes thicker with lower elevation. Between 10,000 and 9,000 feet, dense tropical rain forest, with tree ferns and an abundance of lianas and vines, grows on rain-drenched southfacing slopes. Elsewhere, at the same elevations, the forest growth is not so luxurious. The rain forest is difficult to penetrate but provides excellent concealment. Bamboo thickets are common in the small valleys and gullies. They are exceptionally dense growths that require considerable hacking to penetrate; consequently travel up or down the narrow valleys is very difficult. Numerous small fields of maize and wheat are found at elevations as high as 8,500 feet. At lower elevations, between about 5,500 feet and 2,000 feet or a little lower, much of the Pacific slope is devoted to coffee growing. Viewed from above, this area appears to be a vast forest, but most of the cover consists of shade trees for the coffee plants; only on the most precipitous slopes are stands of true forest found. On the plateau highland, inland from the row of volcanoes, much land has been cleared for agriculture, and only

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Figure 5. Southern part of Lago de Atitlán. Volcán San Pedro in foreground; Volcán Atitlán in left background. View south. Note the cultivated fields on slopes.

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small patches of forest remain. Fields are cultivated at quite high elevations on surrounding mountain slopes. Small forests at elevations above 9,000 feet provide firewood and wood for charcoal. Indian trails crisscross almost the entire sub-region, including even many of the higher slopes. Herdsmen drive their sheep up the steep and slippery paths to high-land grazing areas.

e. Central Sierra Madre

(1) Terrain and Climate

The volcanoes of the central section of the Sierra Madre are somewhat lower than those to the northwest (see Figures 6 and 7). Acatenango Volcano, at 13,045 feet, is the highest of this group. The cone of Fuego, an active volcano, rises from the lower flank of Acatenango. In succession, to the southeast, Volcán de Agua and Volcán de Pacaya rise to over 12,000 and 8,000 feet, respectively. They stand like giant sentinels to either side of the narrow corridor which gives access to Guatemala City from the Pacific coast. The other volcanoes of the group, Cerro Redondo and Tecuamburro, still farther to the southeast, are considerably lower.

The plateau surface inland from the volcanic range is also somewhat lower than the corresponding section to the northwest, and it is more severely dissected. Most of the area is drained by entrenched streams flowing northward to the Río Motagua.

Guatemala City is located on a flat but rather restricted plateau surface near the center of the subregion. The margins of this small plateau are indented by deep ravines (see Figure 8), and streams drain either northward to the Río Motagua or southward into Lago de Amatitlán, a sizable lake at the foot of Volcán de Pacaya.

General climatic conditions for the Central Sierra Madre are much the same as those prevailing to the northwest, although it is somewhat warmer and, as a whole, the area receives less precipitation. Guatemala City enjoys mild temperatures the year round. May, with an average high of 68°F, is the warmest month, and December and January, with average lows of about 61°F, are the coolest. Daily temperatures drop from a high of about 85°F at midday to a low of about 50°F at night. The average annual precipitation is about 50 inches, and the rainy season extends from May to October.

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Figure 6. Central Sierra Madre. Volcán de Agua to the left; Volcán de Pacaya near cloud-covered Lago de Amatitlán.

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Figure 7. Central Sierra Madre. Volcán Acatenango and Volcán de Fuego to the left; Volcán de Agua in the center. Cloud-covered Lago de Amatitlán is in the right background.

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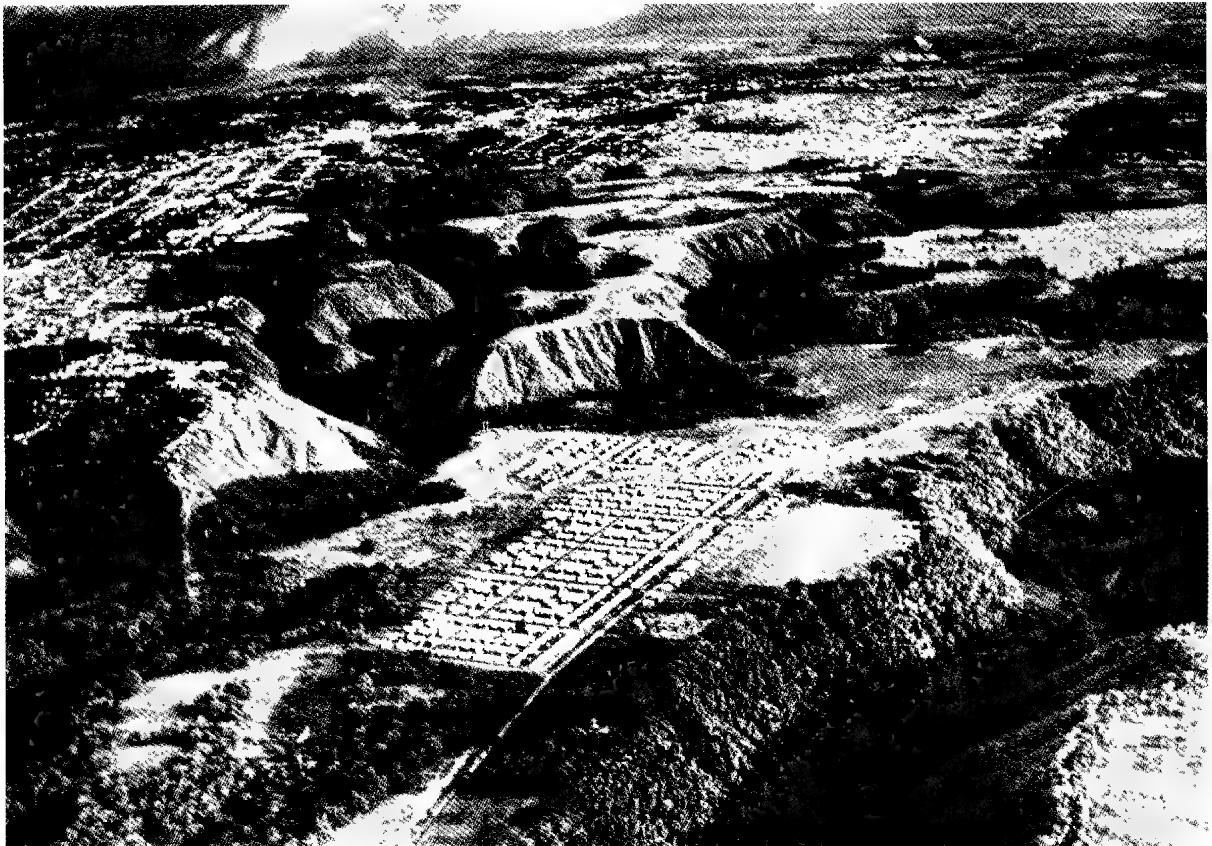


Figure 8. Dissected plateau surface on outskirts of Guatemala City. Note the dense vegetation in the ravines.

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(2) Vegetation and Land Use

The pattern of vegetation on the Pacific slope of the Central Sierra Madre is similar to that of the area immediately to the west, but the extent of high mountain barrens is considerably smaller. Forests mask the higher slopes, and extensive coffee plantations are located at lower elevations. Corn patches, grassland, scrub, and scattered oak forests cover the elongate basin which trends north-east - southwest across the subregion from Lago de Amatitlán to the upper Río Motagua valley. Along the Río Motagua, in the northeastern periphery of the area, the vegetation grades into a dry scrub type with scattered low trees and cactus. Pastures and cultivated fields extend over fairly broad areas in the vicinity of Antigua Guatemala and Chimaltenango. Most of the remainder of the high plateau is covered with a patchwork of small fields and evergreen and deciduous woods (see Figure 9).

f. Eastern Sierra Madre

(1) Terrain and Climate

The Eastern Sierra Madre occupies most of the area eastward from the vicinity of Laguna de Ayarza to the border with El Salvador, northward to the valley of the Río Motagua, and southward to the Eastern Pacific Lowlands. In contrast to the Central and Western Sierra Madre, where volcanoes are arranged almost in file, the distribution of volcanoes here is more irregular; some volcanic cones are located far inland and others are quite near the coast. None of them are as high as 8,000 feet. This subregion is somewhat lower than those to the northwest. It lies at an elevation between 3,000 and 4,000 feet, with scattered small hills and an occasional volcanic cone rising perhaps 2,000 feet above the general surface. It has been so eroded that little of the high plateau surface remains. In general the area is one of moderate relief.

The climate of the Eastern Sierra Madre is warmer and drier than that of the Western and Central Sierra Madre. Lowest mean annual temperatures are about 64°F or 68°F in the area extending from Jutiapa northwestward to Laguna de Ayarza. The warmest section is to the northeast, around the town of Chiquimula, where mean annual temperatures are over 77°F. Annual precipitation is much greater in the south than in the north; Jutiapa receives about 78 inches, whereas Chiquimula receives only 19 inches or less. The rainy season extends from May through October, with September

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Figure 9. Cultivated fields interspersed with wooded patches on the high plateau.

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usually the rainiest month. During the remainder of the year there is relatively little precipitation.

(2) Vegetation and Land Use

The vegetation of the Eastern Sierra Madre reflects the major physical factors that distinguish it from the other Sierra Madre subregions -- lower elevation and decreased precipitation. Patches of maize, grassland, scrub, and small oak forests cover almost the entire subregion. The large coffee plantations, characteristic of the Pacific slopes of the other parts of the Sierra Madre, are absent. Vegetation provides only scattered concealment and presents no problems for movement, except in limited areas.

g. Highlands of the Honduran Frontier

(1) Terrain and Climate

This subregion includes almost the entire zone along the Honduran border. Cerro Montecristo, located in the triborder area of El Salvador, Guatemala, and Honduras, is the highest point in the area. It rises to an elevation of about 7,710 feet. Other mountains along the Honduran border reach elevations of about 4,000 to 6,000 feet, except in the extreme northeast where they do not exceed 800 feet.

Most of the subregion is drained to the northwest by tributaries of the Río Motagua. The southeastern part of the department of Chiquimula, however, is drained by tributaries of the Río Lempa of Honduras and El Salvador. Esquipulas, an important pilgrimage town surrounded by wooded hills and fertile valleys, is located in this southeastern area.

High mountains and steep escarpments characterize the southwest. To the northeast the terrain is rugged but not so high. The crest of the mountain chain lies across the border in Honduras. Most of the southwestern part of the subregion is fairly thickly settled country, and numerous trails give direct access to the border. The northern part, on the other hand, is very thinly settled and is almost entirely covered with a heavy growth of tropical vegetation. The few trails in this section become impassable in the rainy season.

The average annual temperature for the subregion is over 77°F, making this area the warmest in the Central

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Highlands. May is generally the warmest month with an average maximum temperature of about 85°F. The southwest receives considerably less rainfall than the northeast, about 50 or 55 inches annually for the former and 75 to 80 inches for the latter. The southwest has a pronounced winter dry season, November through April, and a midyear wet season, May through October, whereas the northeast has rather heavy precipitation the year round, with somewhat less falling in March and April.

(2) Vegetation and Land Use

The vegetation of the highlands along the Honduran frontier may be divided into two groups: that of the higher, drier southwest and that of the lower, moister northeast. In the southwest it consists mainly of open evergreen, deciduous forests, and many cultivated fields, including a number of small coffee fincas. In the northeast the vegetation is mostly dense evergreen forest. Only occasional patches of cleared land support primitive slash-burn agriculture.

3. Factors Affecting Land and Air Operations

The rugged terrain of the Central Highlands Region makes travel in many places, even on foot, extremely difficult. Cross-country movement in the Sierra de los Cuchumatanes is difficult in general, and in some areas impossible, because of the steepness of the slopes of the high mountains and deep canyons. The road net in the Cuchumatanes is extremely sparse, and over wide areas simple trails are the only practicable routes of movement. In the Sierra de Chamá and the Sierra de Santa Cruz steep slopes also impede cross-country movement, but perhaps to a lesser degree than in the very high Sierra de los Cuchumatanes. Roads in this area, as well as in the Sierra de Chuacús, are also scarce and serve only to link the main towns; the rural areas are served only by trails. The Sierra de las Minas is even more isolated and, partially because of this, has been a favorite hideout for guerrilla bands. Much of the Sierra Madre is extremely rugged and difficult of access. The slopes of the volcanoes are precipitous and dangerous to traverse, and the deep canyons are formidable barriers to movement. Roads are few, but footpaths crisscross much of the area. Many trails are extremely steep and tortuous, and movement on them is slow and dangerous. Conditions for movement are somewhat better in the lower eastern part of the Sierra Madre range. Along the Honduran frontier movement is difficult because of the steepness of the terrain in the southwest and because of the forest and lack of trails in the northeast.

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A great part of the forest cover of the Central Highlands has been cleared for cultivation -- even on some of the steeper slopes -- and there are relatively few extensive areas of thick natural vegetation that can provide adequate protection from air and ground observation. The barren to sparsely covered higher areas of the Sierra de los Cuchumatanes offer little in the way of natural concealment, although the lower slopes and valleys provide numerous excellent places of concealment. The forests of the Sierras de Chamá, de Santa Cruz, de Chuacús, and de las Minas also provide excellent, but limited, places of concealment. On hill and mountain slopes throughout the region, where the ground is too steep for cultivation, there are patches of forest, and many of these conceal stills which are operated by the Indians. These wooded patches would be of only marginal value to guerrillas, however, as they are relatively thin and contain numerous trails. In the limestone areas, such as those of the Sierra de los Cuchumatanes, many caves, some quite large, could serve as excellent places of refuge, shelter, and concealment.

Violent afternoon thunderstorms frequently preclude most types of air operations over the area. The best time for aerial observation is during the dry season, but haze and smoke from brush fires often reduce visibility even during this period. Most potential drop zones in the highlands are located on isolated, sparsely settled high plateau surfaces in the vicinity of Huehuetenango, Totonicapán, and Quezaltenango. Many potential drop zones are also located along the lower Pacific slopes of the Sierra Madre and in the open country of northern Jutiapa department and southern Jalapa department. The high, rugged mountains are a handicap to light aircraft air operations since an aircraft requiring a 1,000-foot run for takeoff at sea level requires a run about three times as long at an elevation of 8,000 feet and sites for emergency landings are few.

C. Pacific Coastal Lowlands Region

1. General

The Pacific Coastal Lowlands consist of the level to rolling coastal plain and the lower foothills of the Sierra Madre range. The region varies in width from about 25 to 30 miles in the northwestern and central sections to about 10 miles in the southeast. It is part of a long, narrow coastal lowland that extends southeastward from Mexico through Guatemala to the Gulf of Fonseca in El Salvador. Population density is not as great as in the highlands; however, there are numerous large plantations, several large inland

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towns, and the important port of San José on the coast. Two subregions can be discerned, one to the west of San José, and the other to the east.

2. Subregions

a. Western Pacific Lowlands

(1) Terrain and Climate

Below an elevation of approximately 1,500 feet, the Pacific slope of the Sierra Madre range merges into a zone of spurs and foothills. Slopes become less steep, generally less than 30 percent, and a gradual descent is made to the nearly level coastal plain which begins at an elevation of about 350 feet and continues to the ocean.

Numerous rivers and streams, some of them quite broad and deep, flow across the lowlands from the mountains to the ocean. Tidal lagoons, marshes, and swamps border much of the coast, all forming serious barriers to movement. The middle reaches of the streams have cut deep valleys and gulches in the rolling foothill zone and the coastal plain. Many of these broad streams are swift, deep, and unfordable in the wet season, April through October, but are easily crossed during most of the rest of the year when the volume of flow is reduced. The lower courses of the streams are bordered by swamps and marshes. The more important rivers are the Río Samalá, Río Sis, Río Iacán, Río Madre Vieja, Río Seco, and Río Colojate. The Río Samalá is particularly broad in its lower course, but its mouth, like that of the smaller streams, is encumbered by sandbars. Many long sand beaches fringe the whole coast (see Figure 10) and are broken at widely spaced intervals by the mouths of the larger rivers. Behind the beaches, movement inland is restricted by the swamps, marshes, and long tidal lagoons. Offshore and nearshore approaches are mostly clear to the beaches, but heavy surf is a danger for small boat operations. Some of the better landing beaches are located near Ocos, Champerico, and San José and near the mouths of the Río Samalá and Río Sis.

The Western Pacific Lowlands subregion is hot and humid; the average annual temperature is over 77°F and the average annual relative humidity is over 80 percent. April through September is the hottest, most humid and unpleasant period; the remainder of the year, although quite warm, is less humid. Most of the rain falls in the period April through October, and the other months are relatively dry. The subregion receives considerably less precipitation than the moist slopes of the Sierra Madre farther inland. Average

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annual precipitation at San José is about 58 inches.

(2) Vegetation and Land Use

The subregion is covered by a patchwork of cultivated fields, scrub, pasture, cutover forest, swamps, and marshes. From the air, trees appear to dominate the landscape because of their conspicuous spreading crowns, but they are actually quite widely spaced in most places and form dense thickets only along the larger streams. Coarse grass interspersed with brush and scrub and small groves of hardwoods and palms cover much of the lower coastal sections. Swamps and marshes are widespread immediately behind the sand beaches and along the lower courses of many of the larger rivers and streams. Extensive stretches of mangrove swamp are located in an area extending from near the Mexican border to about 10 or 12 miles southeast of Oco's and from a location near the center of the subregion to about 25 miles southeast of the mouth of the Río Madre Vieja. These swamps, with their dense tangle of roots and branches, are extremely difficult to penetrate and are formidable barriers to movement inland from the beaches.

The most extensive cultivated areas are in the moist sections of the foothills, especially in the zone adjacent to the rail line from the town of Escuintla to the Mexican border. Sugarcane is grown on well-drained sites in the foothills, and cotton is grown on the outer lowlands (see Figure 11). Cattle are grazed on large haciendas in the coastal plain.

b. Eastern Pacific Lowlands

(1) Terrain and Climate

This small subregion is considerably narrower than the coastal area to the northwest. It is only about 15 miles across at its widest point. The foothill zone found in the Western Pacific Lowlands is almost entirely lacking here; the highlands of the interior slope directly down to the coastal plain in most places. Few of the larger highland rivers reach the coast; of those that do, the most notable is the Río Paz which forms part of the border with El Salvador. There are fewer gorges and steep-sided valleys in the flatlands of this subregion than in the one to the northwest, but the streams are swift and form barriers to lateral movement. The Canal de Chiquimulilla, located within a mile or two of the shore, extends across nearly the entire length of the subregion. This canal and most of the coast is flanked by an extensive swamp. A long sand beach fronts most of the coast;

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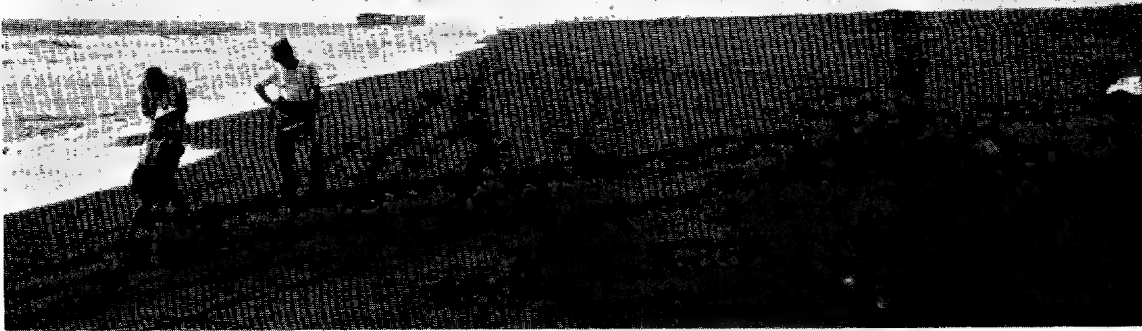


Figure 10. Sand beach on Pacific coast near Champerico.



Figure 11. Cottonfield in Escuintla department. The cotton is over 6 feet in height and would hinder cross-country movement on foot.

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it is unbroken because most streams from the interior empty into the Canal de Chiquimulilla.

Climatic conditions here are similar to those in the coastal area to the northwest. However, temperatures are somewhat higher, and the atmosphere is less humid. Annual rainfall is slightly less, and the dry season (October through March) is more distinct. Downslope winds from the interior highlands often bring warm, dry air into the area.

(2) Vegetation and Land Use

The vegetative cover is similar to that of the Western Pacific Lowlands, although the scrub and dry brush reflect the more arid conditions prevailing in this subregion. Most of the interior presents an open, parklike appearance, with only a few small wooded areas scattered here and there. Extensive swamp forests occupy low-lying areas along the coast. Cattle grazing is important, but there is proportionately less land under cultivation, and there are few large plantations.

3. Factors Affecting Land, Sea, and Air Operations

The major barriers to lateral (northwest - southeast) movement through the Pacific Coastal Lowlands are the deeply entrenched rivers that cut across the region from the mountains to the sea. In the wet season, April through September or October, the depth and velocity of flow of many of these rivers make them unfordable, especially in their swifter sections in the foothills. The steep-sided valleys that these streams have cut are also obstacles to lateral movement through the area even during the dry season. The chief obstacles to movement across the region from the interior to the sea are the extensive swamps, marshes, and tidal lagoons that occupy the low-lying zone directly behind the line of sandy beaches that front the coast.

The dense vegetation of the coastal swamps offers the best concealment against ground and air observation in the region, but inhospitable physical conditions -- the water, deep mud, and insects -- make the areas unsuitable for anything but temporary occupancy. Trees and underbrush along the rivers afford concealment for movement inland from the beach zones. Elsewhere, most of the land is either open pasture or under cultivation and offers little good concealment.

Heavy surf conditions along the coast frequently make small boat handling difficult and dangerous, and strong

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undertows are a hazard for swimmers. Tides are semidiurnal; the mean tidal range at the port of Champerico is about 5 feet. The ocean currents off the coast are unpredictable. At Champerico during the dry season the longshore current usually sets to the east-southeast at about 1 knot or more during spring tides; occasionally it may alternate for 3 or 4 days to the west-northwest. Similar conditions prevail at San José. There are few reefs or other obstructions in the approaches to the long line of beaches. The most important criteria in selecting landing sites are access inland and avoidance of settlements.

Flying conditions are generally better in this region than anywhere else in Guatemala. The dry season, October through March, is the most favorable time for visual air operations, although they are usually feasible during the early morning hours even during the rainy season. Violent storms frequently preclude flying in the period from April through September. Good drop zones and helicopter landing areas are located in the relatively open and level places along the inland margin of the region.

D. Caribbean Lowlands Region

1. General

The Caribbean Lowlands Region consists of a small coastal plain, facing the Gulf of Honduras, and three elongated basins extending inland to the southwest. Much of the region is densely forested and only sparsely settled, but its ports, highway, railroad, and waterways provide access to the more populous interior. The northernmost basin is that of the Río Sarstún and its tributaries; the central basin includes the Río Dulce, Lago de Izabal, and its major tributary, the Río Polochic; the southernmost basin is that of the lower two-thirds of the Río Motagua. In the following discussions subregions bear the names of these basins and include the coastal plains onto which they open.

2. Subregions

a. Río Sarstún Basin

(1) Terrain and Climate

The Río Sarstún Basin extends inland for about 50 miles from the Bahía de Amatique. It is bounded on the north by British Honduras and the low hills of southeastern El Petén department and on the south by the Sierra de Santa Cruz. The Río Sarstún forms the short east-west, natural boundary with

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British Honduras. The mouth of the river emerges from a narrow plain bounded 2 miles inland by low hills. Extending southeastward from the river mouth is a 3- or 4-mile-long sand beach backed by mangrove swamp. Much of the lower 20 miles of the Río Sarstún is also bordered by swamp and marsh, and a number of large creeks drain the flanks of the Sierra de Santa Cruz and flow northward to join the river. This section of the Río Sarstún is very deep, averaging 25 to 60 feet, with minimum depths of about 5 feet over the bar at its mouth; it is therefore easily navigable by small craft even during the dry season. The village of Modesto Méndez is located at the head of navigation for all but very small shallow-draft boats. It is connected by road to Poptún and Flores and serves as a minor outlet for the department of El Petén. Farther inland and upstream from Modesto Méndez, the subregion consists of an area of low limestone hills. The small tributary streams of the Río Sarstún draining this area are swift flowing, and small craft navigation on them is interrupted by rapids in several places.

The subregion is hot, humid, and very rainy. Average annual temperature is about 80°F, relative humidity is over 80 percent, and annual precipitation is up to 180 inches. February, March, and April are slightly drier than the other months of the year.

(2) Vegetation and Land Use

Practically the entire subregion is covered with dense, semitropical rain forest which provides excellent concealment but also seriously impedes movement. Mangroves choke the tidal flats behind the one long beach, and high swamp forests occur along the lower course of the Río Sarstún halfway upstream to Modesto Méndez. Palm swamps occupy the low-lying areas immediately adjacent to the river. On the higher, inland portion of the subregion, the rain forest begins to give way to the low savanna of Alta Verapaz department, and movement on foot becomes easier although the chances of detection are increased because of the lack of concealment. Only in this higher, more open inland portion of the subregion has any appreciable area been cleared for agriculture. A number of small farms are located in the vicinity of Chahal in the northeast corner of Alta Verapaz department; they are served by a tenuous network of trails.

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b. Río Dulce - Lago de Izabal - Río
Polochic Basin

(1) Terrain and Climate

Long, straight, sandy beaches fronting on the Bahía de Amatique lie to either side of the mouth of the Río Dulce. The small port of Livingston occupies a slight ridge on the north bank of the river mouth. The beaches are backed by a level plain that extends inland for about a mile to a line of low hills. Departing from Livingston and going up the Río Dulce (see Figures 12 and 13), one passes through a narrow limestone gorge which then broadens to form a small, sea-level lake, about 3 miles wide and 9 miles long, known as El Golfete. Continuing upstream, the Río Dulce opens onto Lago de Izabal, the largest lake in Guatemala. It is about 12 miles wide and 25 miles long. A narrow plain skirts the lake (see Figure 14), back of which the terrain rises steeply northward to the Sierra de Santa Cruz and southward and eastward to the Sierra de las Minas and the Montañas del Mico. A swampy, wedge-shaped tract fronts the entire southwestern end of the lake. This is the extensive delta of the Río Polochic, chief tributary of the lake. About 25 miles upstream from the delta, the valley of the Río Polochic narrows sharply between the foothills of the Sierra de Chamá and the Sierra de las Minas.

The depth of the Río Dulce, including El Golfete, varies from about 16 to 100 feet, and average depths of Lago de Izabal vary between 36 and 48 feet. These waterways are easily navigable the year round by small craft. The Río Polochic reaches depths of 16 feet in some places; it is navigable downstream from Panzós for boats of 8 foot draft in the rainy season and by boats of 2- to 3-foot draft in the dry season. In very dry years, portions of the Río Polochic may not be navigable during April and May.

The entire subregion is hot and humid and receives abundant rainfall. The higher inland section, in Baja Verapaz, is slightly less humid. Livingston receives more than 180 inches of rainfall annually.

(2) Vegetation and Land Use

Semitropical rain forest covers most of the subregion. The plains area immediately behind the beaches supports a relatively open growth of brush, grass, and scattered trees, but this grades into the dense forests which cover the hills farther inland. Almost impenetrable swamp forests border the

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Figure 12. Río Dulce looking upstream above Livingston.



Figure 13. Steep limestone bluff along Río Dulce.

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Figure 14. Village of El Estor on narrow plain at western end of Lago de Izabal. Sierra de Santa Cruz is in the background.

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main streams and occupy the extensive low delta of the Río Polochic. Comparatively little land has been cleared for agriculture. Small cultivated plots are associated with the tiny fishing settlements that ring Lago de Izabal, and numerous banana trees, palm trees, and small fields of rice and yuca are found in the vicinity of Livingston. Upstream, on the banks of the Río Polochic in Alta Varapaz and Baja Verapaz departments, cultivated plots become more numerous, and small coffee plantations are found in the foothills of the Sierra de las Minas. Opportunities for undetected movement are reduced in the vicinity of these more densely settled areas of the subregion. Preparatory work is currently underway on a large nickel mining operation to be located near the village of El Estor at the western end of Lago de Izabal; the ore reportedly will be transported on barges from the lake to the port of Matías de Gálvez via the Río Dulce. Increased population and activity related to these operations may reduce the opportunities for undetected movement in the vicinity of the lake.

c. Río Motagua Basin

(1) Terrain and Climate

This subregion includes the entire lower valley of the Río Motagua upstream to El Rancho in the department of El Progreso, a distance of approximately 180 miles in which the river drops less than 1,000 feet. It includes the swampy delta to the northwest of the mouth of the Río Motagua. The area is bordered by sandy beaches facing the Gulf of Honduras; one long sandspit jutting to the northwest partially separates the Bahía de Amatique from the Gulf of Honduras and affords protection for Puerto Barrios, Guatemala's principal port. Broad swamps and tidal lagoons border the portion of the lowland facing the Bahía de Amatique north of Puerto Barrios. The valley of the Río Motagua is rather restricted in its lower section between the Montañas del Mico and the highlands of the Honduran frontier. It broadens between the towns of Morales and Los Amates, and much of this section is occupied by large plantations of the United Fruit Company. The valley narrows and then broadens again in the vicinity of the town of Río Hondo in Zacapa department. Farther inland, in El Progreso department, the valley narrows sharply as it penetrates the interior highlands. Numerous small, swift tributaries draining the adjacent hills and mountains join the Río Motagua at right angles throughout its course in this subregion and form obstacles to movement along the valley. Seasonal variations in the flow and depth of the river are large, but in general the depth varies from about 6 to 15 feet.

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Lowest water levels occur in April and May, and the river is easily forded in a number of places in the upper sections of the subregion during these months. During the rainy season the river is largely unfordable, and much of the delta and lowlands adjacent to its lower course are flooded.

The climate of the subregion varies from hot and humid in the northeast toward the mouth of the Río Motagua to extremely hot and dry in the southwest. In May, maximum temperatures around 100°F are experienced in the upstream areas. The lower part of the valley receives abundant and well-distributed precipitation the year round, whereas the upriver sections experience distinct seasonal variations; May through October is the wet season, and November through April is the dry season. Puerto Barrios receives about 114 inches of rainfall a year; Zacapa about 81 inches.

(2) Vegetation and Land Use

Dense rain forest covers practically all of the subregion within the department of Izabal except for the plantations of the United Fruit Company and scattered small subsistence farms. Mangrove swamps lie at the mouth of the Río Motagua and along the inner side of the sandspit that juts into the Gulf of Honduras. Moving up the valley into the department of Zacapa, the character of the landscape and vegetation changes markedly, first through a transitional zone of broadleaf deciduous forest and then into a semidesert of scrub, cactus, and grassland.

The large banana and abacá (hemp) plantations of the United Fruit Company are located in the broader section of the Río Motagua valley between Morales and Los Amates. As in most other sections of the country, maize is the principal crop on the small subsistence farms, but in this subregion it is relatively less important than elsewhere. Pineapples and citrus fruits are also grown. In Zacapa department sugarcane, tobacco, and cattle raising are of some importance. Cattle are grazed in the valley during the wet season but are driven up to mountain pastures during the drier periods.

3. Factors Affecting Land, Sea, and Air Operations

The three depressions of this region include the only practical routes for movement from the Caribbean coast inland to the important interior highlands of Guatemala. With the exception of a few low hills, there are no landform obstacles in the region; rivers, swamps, and natural vegetation are the serious barriers to movement.

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The extensive marshes flanking much of the lower course of the Río Sarstún make movement on foot along this river difficult to impossible. Small boats can navigate most of the Río Sarstún itself, but the smaller upstream tributaries are unnavigable because of rapids. The Río Dulce, Lago de Izabal, and Río Polochic are navigable by small craft, but movement on foot along their margins is impractical in many places because of swamps and marshes. Much of the northern shore of El Golfete, for example, is extremely difficult to traverse because of an extensive area of marsh laced with wide creeks and lagoons. In the huge swampy delta of the Río Polochic, at the southwestern end of Lago de Izabal, the only practical means of movement is by small boat on the meandering streams. Movement on foot in the valley of the Río Motagua is relatively easy except during floods, when much of the lower valley is impassable, or in places where one bank or the other is bordered by marshes or swamps. The possibility of undetected movement along this route is reduced, however, by the numerous small settlements that follow the highway and rail line. Farther up the valley, the lack of natural cover makes concealment difficult, but abundant natural vegetation throughout most of the lower part of the region affords excellent concealment from both ground and air observation.

Several long sandy beaches are suitable for large-scale amphibious landings, and many other sites are suitable for small-scale, undetected landings on the Caribbean coast. Most of the latter are located along the swampy coast north of Puerto Barrios on the Bahía de Amatique.

Tidal ranges along the Caribbean coast are not great; for instance, Puerto Barrios has a tidal range of only about 10 inches. Onshore or offshore winds sometimes tend to influence the tidal effect slightly. The longshore current at Puerto Barrios reportedly sets northwestward at a rate up to about 2 knots or more in the morning and southeastward in the afternoon at a rate of less than 1 knot. The highest breakers along the Caribbean coast occur in the period from September through February. The approaches to the beaches and landing sites are partially obstructed by rocks, reefs, and sandbars. Exit from the beaches and other landing sites is difficult because of extensive swamps and marshes.

Flying conditions are generally good in the region -- better than in the interior highlands -- although smoke from brush fires and haze often restrict visibility in April. Good potential helicopter landing areas are located a few miles southeast of Puerto Barrios and along the lower course of the Río Motagua near Tenedores.

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E. Petén Lowlands and Hills

1. General

The Petén Lowlands and Hills Region of northern Guatemala is part of a vast limestone plain that extends northward over the Yucatan Peninsula of Mexico. The region includes practically all of the department of El Petén and, in addition, small portions of the adjacent departments to the south. Although by no means absolutely level or physically homogeneous, only two parts of the region are sufficiently extensive and distinctive to warrant treatment as subregions -- the Petén Lowlands and the Petén Hills.

2. Subregions

a. Petén Lowlands

(1) Terrain and Climate

The Petén Lowlands slope gradually from an elevation of about 1,000 feet in the extreme south to an elevation of about 150 feet in the extreme north. Small rounded limestone hills occupy an extensive transitional zone adjacent to the highlands of Alta Verapaz department, and similar knobby hills are scattered in a number of places throughout the region. A distinct range of high limestone hills, the Sierra del Lacandón, extends into Mexico between the Río Usumacinta and the Río San Pedro. The highest elevations of the Sierra del Lacandón range between 1,500 and 2,200 feet.

Underground drainage and sinkholes are characteristic of the entire subregion. As a consequence, surface drainage is maintained by only a few large rivers, the most important of which are the Río Usumacinta and its tributaries, the Río San Pedro, Río de la Pasión, and Río Salinas, all flowing northwestward into Mexico. Lesser streams flow northward into Mexico or northeastward into British Honduras. Many larger rivers, especially the Río Salinas and the Río de la Pasión, have extremely meandering courses and their valleys contain numerous remnant, oxbow lakes. Many other small lakes and thousands of water-filled sinkholes are found throughout the subregion. The largest and most notable lake in the area is Lago Petén Itzá, located near the center of the subregion; Flores, the capital of El Petén department, is situated on a small island near the southeastern end of the lake. Extensive swampy areas are scattered throughout the region, especially along the large rivers and in the

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lowlands to the north of Lago Petén Itzá.

The climate of the Petén Lowlands is hot and humid. Average annual precipitation is a little less than 80 inches. The rainy season extends from April through October or November and is excessively humid and hot. The mean monthly temperatures range between 80°F and 86°F in the rainy season and between 74°F and 85°F in the dry season. Traces of hurricane winds, which are rare, can be found in the broad swaths of uprooted trees.

(2) Vegetation and Land Use

The greater part of the subregion is covered by subtropical rain forest. The thickest growth is in the southern part of the subregion, and consists mostly of broadleaf evergreen species. The trees form continuous canopies, with some trees reaching 150 feet in height. An abundant undergrowth seriously impedes movement. Dense stands of spiny palms are especially common along the river courses. Much of the area north of the latitude of Lago Petén Itzá is covered by semi-deciduous forest. Here the trees are lower, about 30 to 70 feet tall, and not so dense (see Figure 15). Their canopies are discontinuous, and the undergrowth of grass and shrubs is less dense so that movement is easier although concealment is not as good. Evergreen trees bordering the watercourses provide better cover. South of Lago Petén Itzá, in an area of roughly 300 square miles extending around and to the east of Libertad, is an isolated tract of open grassland with scattered pines.

Little of the forest has been cleared for agriculture; small plots are found around Flores and some of the villages along the major rivers, but there are no large plantations. Chicle-bearing trees are scattered in a natural state throughout the forests, and small camps of chicle collectors are moved about from one place to another to exploit the untapped trees (see Figures 16 and 17). Because of the scarcity of good roads, many of the small airfields of the Petén Lowlands were constructed by firms engaged in the chicle trade. In addition to chicle, the forests are rich in valuable hardwoods such as mahogany. Large rafts of logs are floated down the major rivers during the flood season. Many are floated down the Río de la Pasión, and then northward through Mexico to the Gulf of Campeche. Other rafts are floated out through British Honduras. Archeological sites of the ancient Maya civilization are scattered throughout the Petén Lowlands, and the more spectacular ones, such as Tikal (see Figure 18) northeast of Flores, attract many tourists as well as scientists.

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Figure 15. Forest near Tikal in northern El Petén department.



Figure 16. Cutting slashes to tap chicle tree in El Petén department.

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Figure 17. Abandoned chicle collector's shack in El Petén department. Note the thorny vines and scrub in the foreground.

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Figure 18. Ruins of Tikal rising above jungle in northern Petén Lowlands.

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b. Petén Hills

(1) Terrain and Climate

This subregion is part of the Montañas Mayas chain of limestone hills and mountains that extends northeastward across the border into British Honduras. The highest point in the subregion is a 3,320-foot peak near the border north-east of the town of Poptún. Poptún is at an elevation of about 1,600 feet and is located on a small nearly level plain surrounded by rounded limestone hills that rise to heights of about 150 to 250 feet above the plain. The Río Machaquilá drains the area in a westerly direction. The small lakes characteristic of the Petén Lowlands are lacking. Because of the higher elevations, the climate is considerably less hot and humid than it is in the lowlands.

(2) Vegetation and Land Use

Rain forest covers most of the lower parts of the sub-region, and the higher hills support dense stands of pine. Grassland and open pine forests are found on the plain around Poptún.

3. Factors Affecting Land and Air Operations

Movement on foot through this region is very difficult because of extensive areas of rugged limestone topography, dense forests, extensive swamps and marshes, and a lack of roads. Most of the small, steep limestone hills are easily circumvented, but in areas where they are closely spaced, travel on foot is arduous. Most sinkholes and small lakes present no serious problems for movement, and they are good sources of potable water. Because of the almost total lack of roads through much of the region, travel by small boats on the streams and rivers is, in many places, the most practical means of movement.

Dense forests, especially in the southern part of the region, provide excellent concealment from ground and air observation. Adequate concealment is available throughout most of the northern part of the region as well, although the forests are not so dense, and many of the trees shed their leaves during the dry season. The only extensive area lacking adequate concealment is the isolated savanna located to the south of Lago Petén Itzá. Much of the region is honeycombed with caves which provide excellent places of concealment.

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Flying conditions are best in the dry season, October or November through March, although haze and smoke from brush and grass fires during the latter month tend to restrict visibilities. There are numerous small airfields throughout the region, but most of them are unserviceable in wet weather. The forests and hilly terrain surrounding many airstrips make landing difficult. Potential drop zones are located in the grassland south of Lago Petén Itzá and in the small plain at Poptún. Scattered clearings in the northern forests offer more secluded drop sites.

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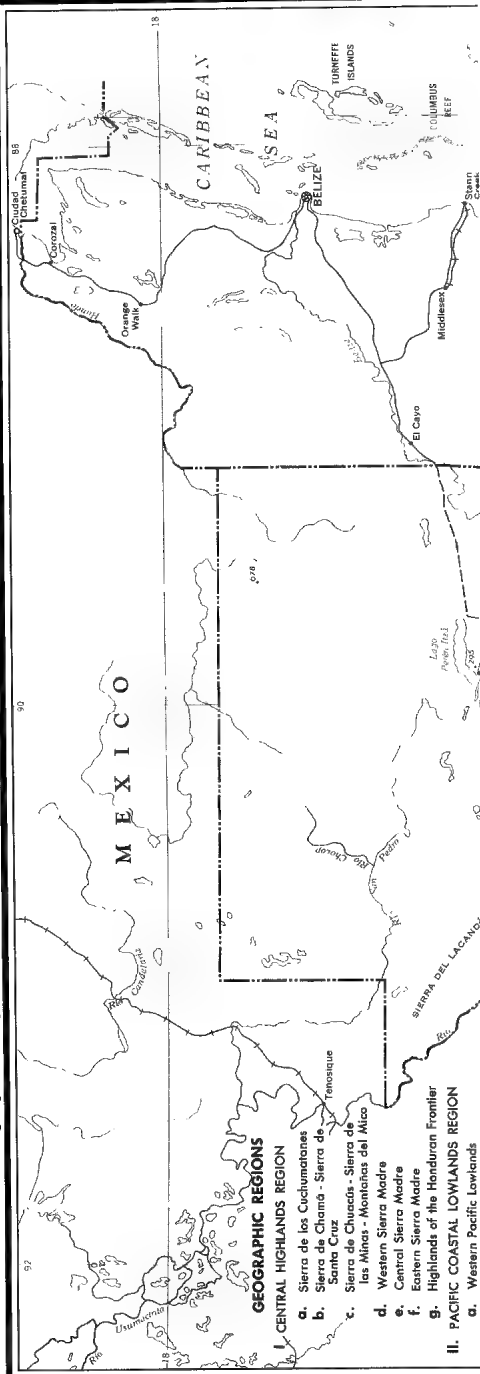
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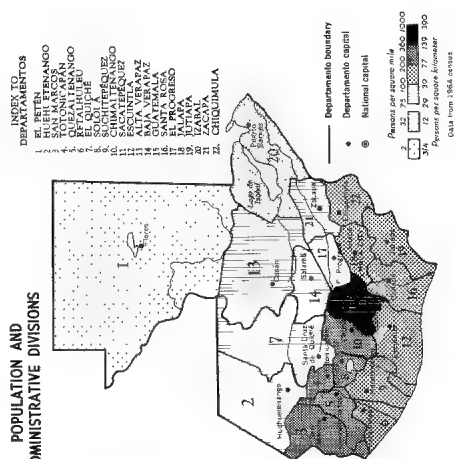
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GUATEMALA: Geographic Regions



POPULATION AND ADMINISTRATIVE DIVISIONS



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Guatemala has more people than any other country in Central America. Preliminary results of the 1964 census* reckon the total population at 4,284,473, which represents an increase of 53.5 percent since 1950, or an average annual increase of 3.1 percent. This increase approximates that of mainland Middle America,** which is the highest among major world regions. One result of the high rate of growth is a young population. About 56 percent of all Guatemalans are under 19 years of age, and the median age of the entire population is 16.6 years.

B. Density and Distribution

The density of population, about 109 persons per square mile in 1967, is high for an agrarian society. This density is exceeded among Central American nations only by neighboring El Salvador, a human beehive with 366 persons per square mile. If Guatemala's current rate of growth continues unchecked, the population could grow to almost 6,900,000 by 1980, with a resultant overall density of about 164 per square mile. When the extensive but sparsely settled northern region of El Petén is not taken into account, the current population density already approaches 164.

Population distribution in Guatemala has been influenced largely by climate.*** The hot, humid lowlands have been avoided by Indians and Europeans alike. Fully 75 percent of the people live in upland zones above 1,500 feet. The lowland of El Petén is virtually uninhabited; the Caribbean and Pacific lowlands have been actively settled only in recent years as plantation agriculture has developed. The Central Highlands Region is the most densely populated part of the country. About 60 percent of the total population and 65 percent of the Indians live in the highlands west of Guatemala City, or in roughly 25 percent of the total area of the country. The highland area east of Guatemala City also is densely settled, but less so than the area to the west.

The population of Guatemala is overwhelmingly rural -- 66 percent of the population was so classified according to preliminary data from the 1964 census. In only two departments -- Guatemala and neighboring Sacatepéquez -- does the urban portion exceed 50 percent of the total.

* See Table 1.

** Comprises Central America as well as Mexico.

*** See Map 56128

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Table 1
Area and Population by Department
1964

Department	Area (Sq. Miles)	Percent of		Population				
		Total	National Total	Density Per Sq. Mile	Ladino	Indian	Rural	Urban
Alta Verapaz	3,354	259,873	6.1	77	8.0	92.0	88.4	11.6
Baja Verapaz	1,206	95,663	2.2	79	48.0	52.0	83.8	16.2
Chimaltenango	764	163,753	3.8	214	24.0	76.0	62.6	37.4
Chiquimula	917	151,241	3.5	165	51.0	49.0	78.7	21.3
El Petén	13,843	26,720	0.6	2	75.0	25.0	55.3	44.7
El Progreso	742	66,734	1.6	90	+99.0	-1.0	72.4	27.6
El Quiché	3,235	247,775	5.8	77	15.0	85.0	86.8	13.2
Escuintla	1,693	269,813	6.3	159	93.0	7.0	75.6	24.4
Guatemala	821	813,696	19.0	991	90.0	10.0	22.0	78.0
Huehuetenango	2,857	286,965	6.7	100	33.0	67.0	84.1	15.9
Izabal	3,490	114,404	2.7	33	88.0	12.0	74.0	26.0
Jalapa	797	97,996	2.3	123	58.0	42.0	73.7	26.3
Jutiapa	1,243	199,053	4.5	160	+99.0	-1.0	81.4	18.6
Quezaltenango	753	268,962	6.3	357	46.0	54.0	64.4	35.6
Retalhuleu	717	122,829	2.9	171	66.0	34.0	73.5	26.5
Sacatepéquez	180	80,479	1.9	447	55.0	45.0	27.5	72.5
San Marcos	1,464	332,303	7.8	227	40.0	60.0	86.8	13.2
Santa Rosa	1,141	155,488	3.6	136	+99.0	-1.0	79.9	20.1
Sololá	410	108,815	2.5	265	8.0	92.0	66.5	33.5
Suchitepéquez	969	186,299	4.3	192	46.0	54.0	71.7	28.3
Totonicapán	410	139,636	3.3	341	5.0	95.0	86.0	14.0
Zacapa	1,039	95,976	2.3	92	89.0	11.0	72.2	27.8
Republic of Guatemala	42,045	4,284,473	100.0	102	56.7	43.3	65.9	34.1

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Population pressures on the already overcrowded farmland have become intensified by rapid increases in population in recent decades and by the traditional but impractical custom of dividing family plots equally among surviving children. As a consequence, there has been a marked movement of people away from the farms of the Central Highlands. Some tend to migrate to urban areas, with Guatemala City the goal of most. The capital city -- which grew from 294,000 to 573,000 inhabitants between 1950 and 1964, primarily because of an influx from rural areas -- is now almost 13 times the size of the second city, Quezaltenango. Other people, mostly Indians, become migratory farmworkers, traveling downslope toward the Pacific lowlands, exchanging their labor for cash or additional cropland. Employment is available on a seasonal basis on large coffee plantations along the lower slopes of the mountains and, of late, on burgeoning cotton plantations along the Pacific lowlands.

C. Ethnic Composition

Mayan Indians and Spaniards are the principal racial types of Guatemala. As elsewhere in Latin America, the Spaniards freely mated with the Indians to produce a mestizo type. In Guatemala, however, Spaniards were not numerous and confined themselves to the capital city and larger provincial towns. Thus the Indian element remained dominant. African ancestry is represented by a small minority group along the Caribbean Lowlands. These are the Black Caribs, Negroes who have mixed with Carib Indians of the West Indies.

The Mayas, a subgroup of the Mongoloid race, have short, thickset, muscular bodies; males average about 5 feet in height, and females about 4 feet 8 inches. Eyes are dark brown to black, and the Mongoloid fold is not uncommon. Hair is straight and black; although baldness is rare, facial and body hair are sparse. Skin color varies from warm copper to dark reddish brown (see Figure 19).

Mestizos, or European-Indian crossbreeds, vary considerably in the dominance of white or Indian traits (see Figure 20). They are somewhat taller than the Indians, and their eyes, hair, and skin are dark, although less so than those of the pure Indians. Some blonds are found in certain highland coffee-producing areas where Germans have settled and intermarried.

Negro characteristics dominate the physical appearance of the Black Caribs -- a tall, husky body build; dark skin, hair, and eyes; broad, flattened noses; and everted lips (see Figure 21).

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Figure 19. Indians of Chichicastenango area, department of El Quiché. The physical characteristics of these people are Mayan, and their clothing is typical of that worn by Indians in the area.

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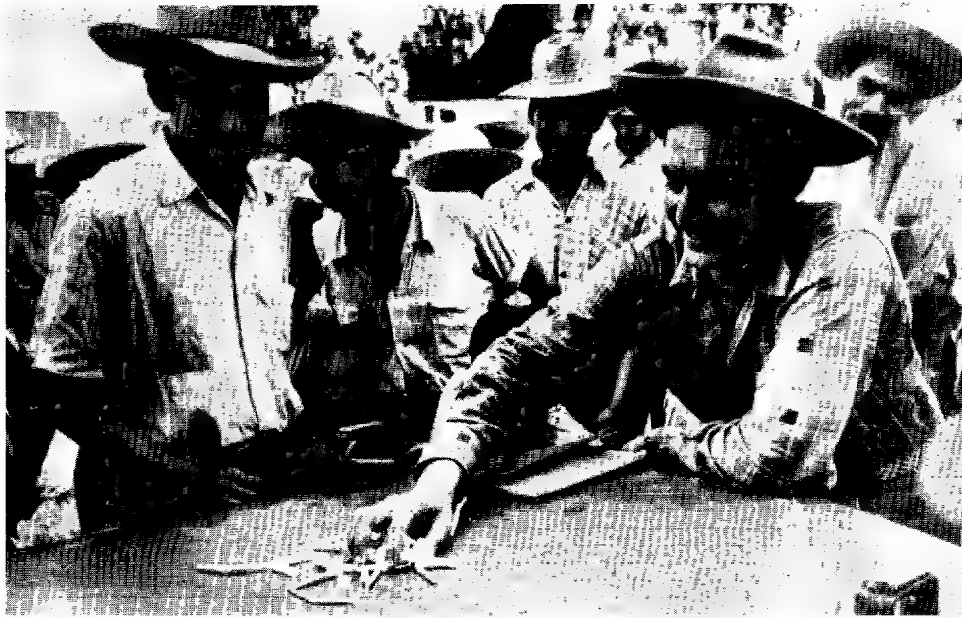


Figure 20. Group of mestizos who are rural Ladinos.

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Figure 21. Black Caribs of the Caribbean coast.

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D. Cultural Contrasts

The ethnic classification of the Guatemalan population is based as much on cultural as on racial backgrounds. For census purposes, an individual is classed either as an Indian or as a Ladino, depending largely on his way of life. Specifically, if a person speaks an Indian dialect and his Spanish (if any) is obviously a second language, if an Indian costume is his daily garb, if he participates in the politico-religious life of an Indian community, if any or all of these things can be said of him, he is certain to be counted an Indian by Indians and Ladinos alike. If, on the other hand, his mother tongue is Spanish, his costume is of European type, and he does not participate in the life of an Indian society, he is almost certain to be considered a Ladino.

Based on these broad criteria, the 1964 census found 43 percent of the Guatemalans to be Indians, 57 percent to be Ladinos. Included among Ladinos, most of whom are of mixed European and Indian blood, are small numbers of North Americans, Europeans, Orientals, and Negroes. Some Black Caribs speak Spanish and are regarded as Ladinos, whereas others still speak Carib and are classed as Indians.

Although both Indians and Ladinos are found throughout the country, in any given municipio* either one or the other is in a substantial majority; rarely do the two groups live in equal proportions. The bulk of the Indian population resides in the western and north-central parts of the Central Highlands Region. The departments of Sololá, Totonicapán, and Alta Verapaz are more than 90 percent Indian, and the percentage of Indians is 85 in El Quiché and 76 in Chimaltenango. The eastern section of the country has the highest concentration of Ladinos. They comprise close to or more than 90 percent of the population in the departments of El Progreso, Santa Rosa, Jutiapa, Esquintla, Guatemala, Zacapa, and Izabal.

The Ladino considers himself superior to the Indian. Relations between the two groups vary from the extremes of social stratification found in the eastern highland to near equality in other areas. Most communities lie somewhere in between. In any given village Indians and Ladinos generally dwell in separate sections. Ladino homes usually are clustered around a central plaza, the preferred location according to

* The second order administrative division, roughly analogous to US counties.

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traditional Latin American values. The poorer dwellings of the Indians tend to be found in the peripheral zones. Although Indians are not physically segregated in public places, social distance is maintained by prescribed patterns of behavior. Indians generally use the formal terms "señor" or "don" in addressing Ladinos, and on a narrow sidewalk they are expected to step aside to allow Ladinos to pass. Indians enter a Ladino home only if invited, and then by the back door. Inter-marriage between groups is not common, although sexual relations between Ladino males and Indian women are not frowned upon.

1. Indians

An Indian of Guatemala belongs to one of many distinct social groupings, each of which tends to be confined within the limits of a particular municipio. The municipio boundaries were established by the Spaniards, and through the centuries the Indians within each municipio have developed a cultural homogeneity of their own. In recent years the cultural individuality of the municipio has been modified but not eliminated. Indians of a particular municipio may be identified by the distinctive cut, color, and design of their everyday garb, even though some elements of Western dress may be added (see Figures 19, 22, and 23). Both wool and cotton are worn. Textiles for home consumption are woven by women on small backstrap looms (see Figure 24). Commercial treadle-loom weaving is performed by men in small Ladino-operated shops. The basic items of Indian clothing are blouses, skirts, and shawls for the women; trousers, shirts, and coats for the men. Both sexes wear elaborate sashes or woven belts. Sandals, if worn at all, are simple leather soles with single heel and toe thongs. Indian women prefer to go barefoot and they generally do not wear hats, although many dress their hair elaborately.

Another distinction between Indian groups is language.* There are five major Indian linguistic families related to the Mayan language, each of which is divided into a number of dialects. The major linguistic families and many of the dialects are for the most part mutually unintelligible. Even within the same dialect, slight variations in vocabulary, pronunciation, and grammar sometimes make communication difficult.

The Indians' economic life is centered around regional markets, which are scheduled so as to permit attendance at several different markets each week (see Figures 25 and 26).

* See Map 56127

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Figure 22. Indian girl in native costume. She is a member of the Mam tribe of San Miguel Ixtahuacán, department of San Marcos.

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Figure 23. Indian woman and child wearing dress typical of the Cobán area, department of Alta Verapaz.

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Figure 24. Indian women weaving with hand looms.

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Figure 25. Overall view of market at San Francisco el Alto, department of Totonicapán, on market day.

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Figure 26. Closeup view of market at Santiago Atitlán, department of Sololá, on market day.

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Figures 27 and 28. Indians carrying pottery on a frame called a huacal or cacaxtli.



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Figure 29. Indian with load of firewood.

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Figure 30. Beasts of burden -- men, women, and donkeys.

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Figure 31. Principales in town of Sololá.

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Commodities are brought to market on the backs of Indians, many of whom are itinerant peddlers walking from market to market with unbelievably heavy loads (see Figures 27 through 30). The Indian peddler is a common sight along the roads.

The typical Indian community, although officially governed by Ladinos, is unofficially presided over by a group of elders called principales (see Figure 31). A principal is appointed for life from within the Indian community and holds the highest position in Indian society.

Daily life in an Indian village is dominated by religion -- nominally Roman Catholic but with a large measure of supernatural beliefs inherited from Mayan ancestors. Many routine activities are attended by such pagan rites as the blood sacrifice of animals or witch doctors' incantations. Geographic isolation has helped to foster a close-knit, inward-looking community that provides only a limited view of the outside world. An Indian is comfortable only in his own group and, when permanently out of touch with his village and its people, may be beset with espanto or susto (magical fright).

In recent years population pressures on the land have forced many Indians to leave their community and seek work in a town or on a plantation where Ladinos are in the majority. The Indian finds himself not only cut off from his own culture but subjected to an alien culture. If he adopts certain Ladino traits he is shunned by his native society, but unless he completely embraces Ladino ways the latter still consider him an Indian. Even if he completely adopts the outward manifestations of a Ladino, there are communities in the eastern and extreme northwestern highlands where it is virtually impossible for an individual known to have Indian parents to be accepted as a Ladino. The individual may only bide his time and hope that his children or grandchildren will be accepted as Ladinos, or he can move to another village where his ancestry is unknown. Despite the difficulties involved, many Indians have passed and are passing into the Ladino group.

2. Ladinos

Ladinos live in a secular society directly opposed to the Indians' close-knit religious community. In rural areas Ladinos are divided into two classes, upper and lower. Large landholders, businessmen, and professionals comprise the upper class; farmers and farm laborers make up the lower class. No matter how poor a Ladino may be, however, he is still

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considered superior to the Indian.

A two-class system also is common among Ladinos in most urban areas, although in Guatemala City there is a small middle class composed of small businessmen, white-collar workers, teachers, and technicians. Members of this class tend to identify themselves with the upper class and as such consider manual labor beneath them; within their modest means they employ at least one domestic servant. The upper class urban Ladinos of Guatemala City represent the zenith of Guatemalan society (see Figure 32). There is a small class composed of wealthy businessmen, certain professionals, high government officials, and large plantation owners. They are sophisticated and cosmopolitan and live luxuriously. Most have been educated in Europe or the United States, and they send their children abroad for schooling. The bulk of urban Ladinos, however, are at the lower end of the social scale, eking out a bare existence at various unskilled labors (see Figure 33). The one advantage that they have over their rural counterparts and over all Indians is that they have access to more educational opportunities and thus have a better chance to improve their lot.

Ladinos speak Spanish; few have mastered an Indian dialect. Dress for men and women alike follows the Western mode, although in rural areas in a somewhat rustic fashion (see Figures 34 and 35). Lower class Ladino men rarely wear a necktie or jacket and often lack socks or underwear. In extremes of poverty they may wear Indian sandals or go barefoot.

E. Religion

More than 95 percent of Guatemalans are nominally Roman Catholics. In rural areas, especially those that are predominantly Indian, religion is a combination of Catholicism and indigenous pagan practices. Small Protestant congregations also are found in all larger Guatemalan towns, with Presbyterians comprising the largest single group.

There is strict separation of church and state in Guatemala. The Roman Catholic church itself is poor, conservative, and relatively inactive in the field of social welfare. Most Guatemalan priests are natives of Spain and usually learn no Indian language. They are stationed in the larger cities and towns and rarely visit rural areas. In 1872 there were 119 priests; by 1950 there were 120, or

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Figure 32. Upper class Ladinos leading a political parade in Guatemala City.



Figure 33. Lower class Ladinos in Guatemala City.

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Figure 34. Rural Ladino, with machete tucked under his arm.



Figure 35. Group of rural Ladinos.

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about 1 for every 22,500 persons. It is estimated that there are currently fewer priests in Guatemala per thousand Catholics than in any other Latin American country. Religious orders from North America (the Maryknollers) and from northern Europe, with the tacit approval of the Church, work for social reforms as well as provide spiritual guidance. Their activities are centered among the Indians of the northwestern highlands.

Protestants, regardless of sect, are usually called evangélicos. Missionaries go into the countryside to engage in social welfare activities and give religious instruction, but their presence generally creates an undercurrent of tension when they come into contact with the local church or with any of the various Catholic orders.

Through the centuries the Indian has so thoroughly mixed Catholicism and paganism that it is difficult to separate one element from the other. His religion permeates all aspects of everyday life and is intimately associated with his political, economic, social, and personal affairs. It is organized on the local level around the cofradía, a voluntary lay fraternity that is responsible for the care of the village church and shrines, for conducting fiestas, and for organizing pilgrimages. Service in the cofradía is considered an obligation as well as an honor, and boys of the village usually begin in minor positions at age 15.

Indian Catholicism displays a decidedly local character, there being almost as many variations in religion in western and north-central Guatemala as there are municipios. Each municipio tends to have its own set of supernaturals, and the most important one is the patron saint for whom the village and municipio are named. Some saints are considered to be the counterparts of native Indian deities. Saints are represented by elaborately carved wooden images, richly dressed. Native Indian deities are rarely represented by material images, although there still are stone idols in some localities. The church and the family altar in the home are sacred places; so also are certain hills, caves, streams, and lakes, as well as sun, moon, and stars, which are thought to be inhabited by deities, spirits, or apparitions.

Sacred shelters, often little more than semicircles of rocks and brush where Indians come to perform rites, are scattered around the countryside (see Figure 36). A favored location for these shelters is the summit of a hill. The cross is an important symbol, and a number of them may be found at strategic spots such as village approaches, municipio boundaries, and places where trails cross the top of a ridge

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or the floor of a valley (see Figure 37). Crosses also are found at the sites of fatal accidents. Maize, cacao, pumpkin seeds, and other vegetable products may have sacred implications. Turkey blood is used in sacrificial ceremonies. The snake is often associated with rainmaking deities and also with lightning. Intoxicating beverages are liberally consumed at religious ceremonies, and liquor is sprinkled on sacred objects.

A chimán, or local practitioner of the supernatural arts, acts as intermediary between the Indian and the spirit world. He usually is over 45 years of age, and often beyond 60, since it is believed that only with age does one gain the experience to master the ritual, wisdom, and tradition handed down from the ancestors. Several chimanés, one of whom is recognized as the leader, serve a municipio. Each develops a clientele of families who call on him to pray when they are in trouble or to divine and foretell the future.

The religion of the urban Ladino is similar to Roman Catholicism found elsewhere in the Western World. The rural Ladino's religion is somewhere in between Catholicism and paganism, though closer to orthodox Catholicism. He does not rely on witchcraft, magic, and exotic medicines but is concerned with the religious formalities of baptism, confirmation, and marriage. Because of a scarcity of priests in rural areas, however, none of these ceremonies may be available to him. Thus many rural Ladinos live in common-law unions as do the majority of Indians. Among Ladinos, religion is more the concern of the women and is usually resorted to by men only when a special need is felt. Indian cofradías find their counterparts among Ladinos in the hermandades, which are composed of women from the higher stratum of local society who exercise considerable control over local church affairs.

Ladinos and Indians alike are saint worshippers and make pilgrimages, often on foot, to various shrines. The most important pilgrimage is to the shrine of the "Black Christ" at Esquipulas (14°34'N 89°21'W), where thousands converge on 15 January from all over Guatemala and from neighboring countries as well. Other important pilgrimages are made to San Felipe de Jesús, a suburb of Antigua Guatemala, on the first Friday in Lent; to Chajul on the second Friday in Lent; and to Chiantla on 2 February.

F. Housing

Most Guatemalans live in houses that are grossly inadequate. Construction materials are of three main types -- adobe, bajareque (wattle and daub), and cornstalks or

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Figure 36. Indian worshipping at shrine that combines pagan and Christian symbols. Note basket of food to be left as offering.



Figure 37. Shrine consisting of rocks and wooden crosses on shores of Laguna de Chicabal, department of Quezaltenango.

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poles. Adobe is most common in urban areas, and bajareque, cornstalks, or poles are generally used in the countryside. Roofs on lower class dwellings are of thatch in rural areas and of tin in urban areas, whereas tile is most common on better dwellings throughout the country.

The typical rural Indian family lives in a hut known as a ranchito that is made from local materials and lacks even the most primitive sanitary facilities (see Figure 38). Most have dirt floors and one room in which the family cooks, eats, and sleeps. Seldom are there windows, and domestic animals often are kept in the house. A fireplace consisting of three stones is set on the floor and has no opening for smoke to escape (see Figure 39). Cooking and heating are done almost entirely with wood, since charcoal is too expensive. Invariably, the hut is situated in the middle of the milpa, or vegetable garden of corn and beans. The best vegetables are found nearest the hut where soils are most fertile because of the deposit of human waste.

Rural Ladino homes are similar to Indian homes except that they are somewhat larger and often contain two or more rooms (see Figure 40). Both types are apt to have a shrine with a religious picture and burning candles.

Urban centers, especially Guatemala City, have large areas of overcrowded and unsanitary houses. The poorer dwellings, known as barracas, contain only one or two rooms. In many houses the second room is just a lean-to for cooking. Better homes favor a Spanish colonial style of architecture and are usually situated near the center of the city. Housing deteriorates as one moves out from the center of the city, and suburbs as we know them are rare.

Living conditions for migrant workers on plantations are squalid (see Figure 41). Large primitive barracks house numerous families in one room where cooking and sleeping areas are combined. Bathing and other sanitary facilities usually are nonexistent.

G. Education

The Guatemalan rate of illiteracy -- 63 percent -- exceeds that of all other Central American countries. Illiteracy is higher among Indians (87 percent) than among Ladinos (45 percent); it is also higher in rural areas (82 percent) than in urban areas (41 percent).

Primary schooling is legally obligatory, but the law has not been enforced. Adequate school facilities are

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Figure 38. Adobe and thatch homes of Indians in Santiago Atitlán.



Figure 39. Cooking stove in Indian dwelling.

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Figure 40. Typical rural Ladino home.



Figure 41. Makeshift living accommodations of Indian migrant laborers on cotton plantation in Pacific Lowlands.

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lacking, especially in rural areas. It is not uncommon to find a one-room school serving an area in which several thousand persons live. Inadequate transportation facilities make attendance impossible for many in isolated communities. Those who do attend school usually do not remain long. According to the 1964 census, 68 percent of all persons over 7 years of age had not completed any grade of school; among Indians the comparable rate was even higher -- 89 percent.

Teachers are scarce and their abilities limited. The vast majority of rural teachers are empíricos, persons with little or no education to qualify them for their jobs but who learn as they gain experience.

Many Indians upon entering school must first learn to speak Spanish. From the Indian viewpoint, the ability to read and write Spanish is unnecessary for success as a farmer. Of more importance to equip him for the Indian way of life is the informal education acquired at home. Many Indian families are reluctant to allow a child the time to attend school when there is work to be done at home.

Public secondary education is limited to the larger towns. Several types of vocational or technical training are available. One of these, a National School of Agriculture (established in 1921), gives a 5-year course that combines classroom work with practical agriculture. The majority of Guatemalans are ineligible for admission, however, since at least 6 years of elementary schooling are required and only 4 percent of the population over age 7 have attained this level.

The oldest institute of higher education is the University of San Carlos de Guatemala in the national capital. It has faculties of juridical and social sciences, medicine, dentistry, engineering, economics, humanities, agriculture, chemistry, and pharmacy. Most students and teachers work full time at other jobs, so classes are concentrated in the early morning and evening. In 1962 a Catholic university, Universidad Rafael Landívar, was opened in Guatemala City.

H. Health

In Guatemala public health is at a low level because of poverty, illiteracy, unsanitary living conditions, inadequate nutrition, and a scarcity of medical personnel and facilities. The crude death rate is 16.8 per 1,000, considerably higher than in neighboring El Salvador and

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Mexico. Life expectancy at birth, based on 1949-51 statistics, is only 44 years. As with all statistics in Guatemala, this figure requires ethnic refinement -- the Indians' life expectancy is 38 years, the Ladino's is 49 years. Few people live more than 50 years.

There are approximately 70 hospitals with an estimated 12,000 beds, or about 2.8 beds per 1,000 persons. In 1964 there were 866 doctors, or about 2 for each 10,000 persons. Both ratios are misleading, however, since 40 percent of the hospitals and 75 percent of the doctors were in the Guatemala City area.

Three-fourths of the country is malarious, with the highest incidence in the Pacific Coastal Lowlands, the Lago de Izabal area, and the southwestern part of El Progreso department. The US Agency for International Development (AID) has a malaria eradication program underway, but progress has been slow. Other prevalent diseases are intestinal and worm infections, respiratory and dietary deficiency diseases, leishmaniasis, and venereal diseases. Both canine and bat rabies are common. Improper handling of food spreads disease, and much of the food sold by vendors or in open markets is exposed to dust and flies. Night soil commonly is used to fertilize vegetable crops. Marked undernourishment is widespread. The average daily per capita intake of about 2,000 calories is one of the lowest in the Western Hemisphere. Numerous cases of kwashiorkor in young children point to a lack of animal protein in the diet. Goiter is endemic and affects over 25 percent of the population (see Figure 42).

Only a few urban areas have sewerage systems, and none have sewage treatment plants. Crude latrines are common throughout the countryside. Water sources are directly contaminated by man and animals and during the rainy season by ground drainage (see Figures 43 and 44). Water pollution is a factor in the high incidence of intestinal infection.

Existing medical and public health personnel and facilities, inadequate to begin with, are further hampered by the superstitions widespread among the Indians. Many Indians believe that illnesses are caused by internal conditions within the body combined with external forces. The internal conditions include such physical states as overexertion, body exposure, infancy, old age, pregnancy, menstruation, menopause, and an improper balance between heat and cold, and such mental states as fear, anger, jealousy, hysteria, and a lack of faith in the supernatural. The external factors are usually produced by

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Figure 42. Indian woman with goiter.

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Figure 43. Water supply for Santiago Atitlán.



Figure 44. Water supply for Totonicapán.

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supernatural agencies and include an evil wind, sudden fright, the evil eye, sorcery, and molestation by spirits. If magical or supernatural causes are suspected, a diviner ascertains whether the supernatural is at work. If so, than a curandero, or curer, is consulted. He uses a variety of folk medicines to effect a cure. For example, an herb boiled with cinnamon sugar and roasted cockroaches is a remedy for lung trouble. When the body is too hot, blood from the neck of a freshly killed skunk is drunk. Psychosomatic illnesses probably are common and often helped by these primitive approaches, but disorders that result from bacterial infections, lack of sanitation, and nutritional deficiencies take an unnecessary toll of life when improperly treated.

I. Attitudes and Loyalties

Basic cultural contrasts between Indians and Ladinos are reflected in their attitudes and loyalties. In traditional Indian society the group is more important than the individual. Personal achievement is an alien concept; an Indian's worth is measured by his contribution to the community of which he is a member. The Indian is not particularly interested in what goes on beyond the boundaries of his municipio, even though he may be aware of larger cities and towns, and he has little, if any, notion of Guatemala as a nation. Usually he looks to the elders in his community for models of aspiration. The Indian is conservative and generally supports the established power at elections -- not out of political conviction but to preserve the status quo, which in this case means being left alone to follow his traditional way of life.

To the Ladino, the individual is more important than the group. The high value he places on personal freedom may be expressed in disrespect for laws and regulations that restrict his actions. Although traditional and conservative in many ways, the Ladino reacts to political upheavals as welcome changes to an otherwise monotonous existence. He has a far greater sense of national consciousness than does the Indian.

A muted animosity generally prevails between Indian and Ladino. Downtrodden for centuries, the Indian harbors deep resentment toward the Ladino. He is less stoical than one might be led to believe, and on more than one occasion the Indian has erupted into violence. The Ladino fears the consequences of any Indian assumption of political power, but by continuing repression he is fostering Indian resentment.

Educated Guatemalans tend to admire and imitate North

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American ways, although there is an undercurrent of jealousy because of the overwhelming size and wealth of the United States. The majority of Guatemalans, however, have no concept of lands beyond their border, although they are susceptible to propaganda that points out their impoverishment and provides them with a scapegoat in the form of "Yankee Imperialism" or some similar expression.

J. Paramilitary Potential

The rural Guatemalan, making up the bulk of the population, is not yet a significant political force. Illiterate, undernourished, and diseased, he devotes most of his time to keeping alive and has little energy left for such intangibles as freedom and nationalism. Because of his impoverished lot, however, he presents a fertile field for any group with the ability to capitalize on his latent discontent.

The guerrillas, who have been active in Guatemala off and on for the past decade, have been able to count on a certain degree of support, either out of fear or friendship, from the local peasant population. This has enabled them to maintain their security and has provided them with a certain amount of food and shelter. The guerrillas have tried to win Indian support by playing on their hatred of the government, by promising them land, and by using their superstitions to project a myth of invincibility around the guerrilla movement. The Indians once believed that the guerrillas could not be wounded as they were protected by a chiman and that Yon Sosa could always escape capture by turning himself into another shape. This belief in guerrilla invulnerability has been considerably shaken by the army's successes.

Recently, the Indians have refused to support the guerrillas once the army has moved into their area and have even gone to the extreme of leading army units to the guerrilla camps. Those Indians who were enrolled in the guerrilla irregular units (those who trained with the guerrillas when not working their farmlands) have refused to continue their participation with the units.

Urban terrorism has been a basic weapon used by the guerrillas. They have specialized in daring kidnappings and assassinations of Guatemalan officials and in hit and run attacks against police patrols. There is no indication, however, of any urban support for these activities other than from some university students and members of the Communist party. On the contrary, guerrilla activities seem to have had a definitely unsettling effect on the population as a whole.

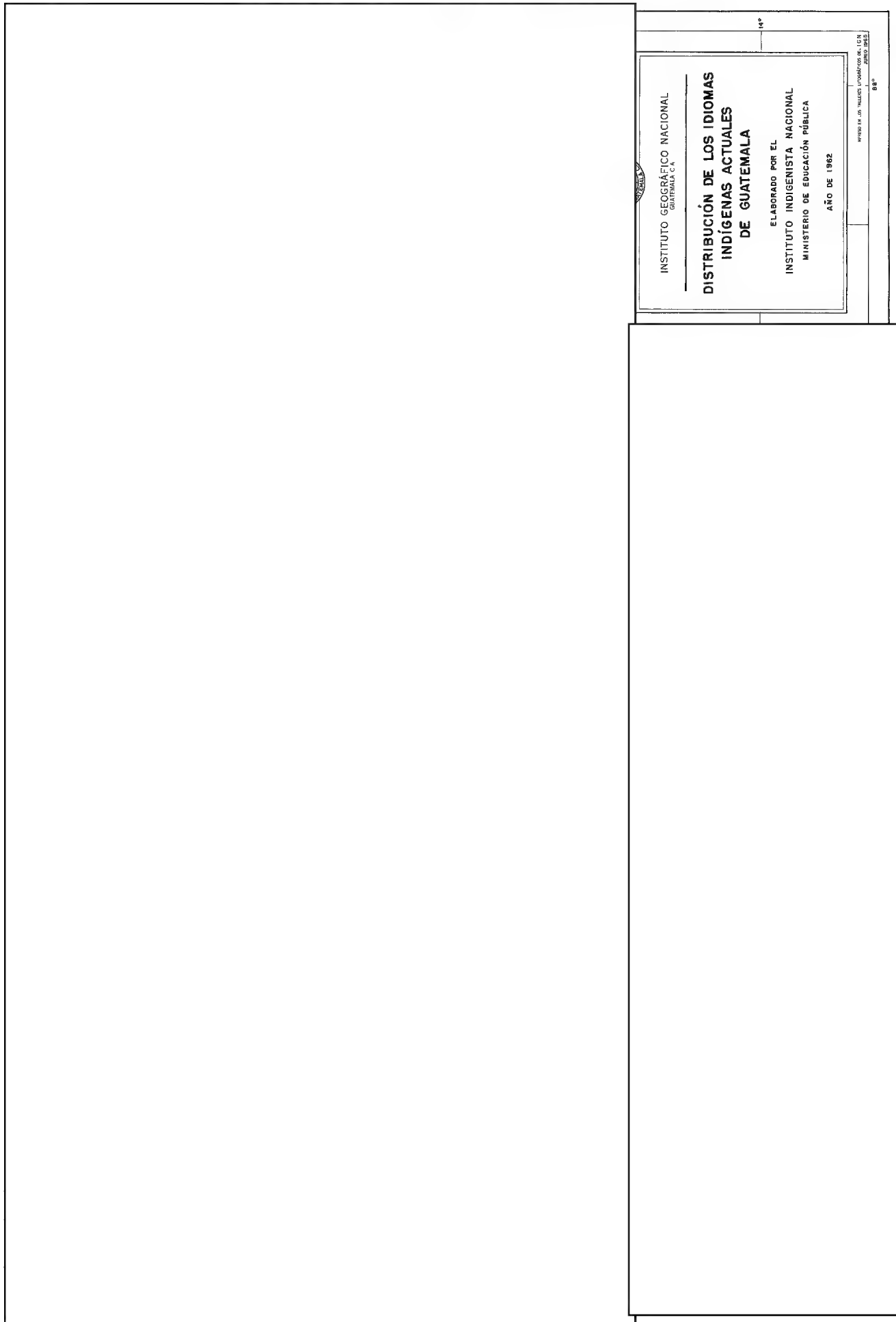
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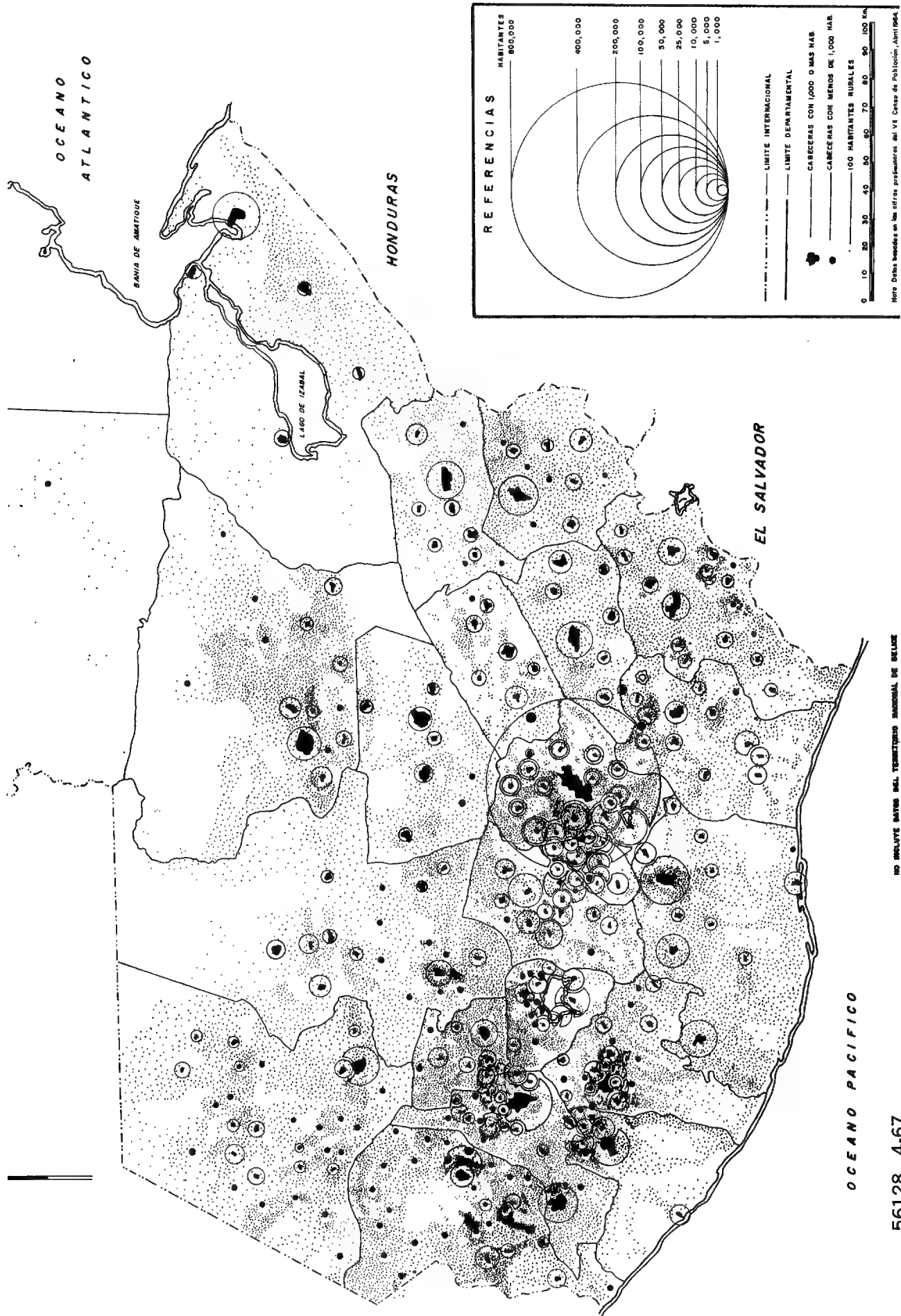
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Distribution of Indigenous Languages in Guatemala

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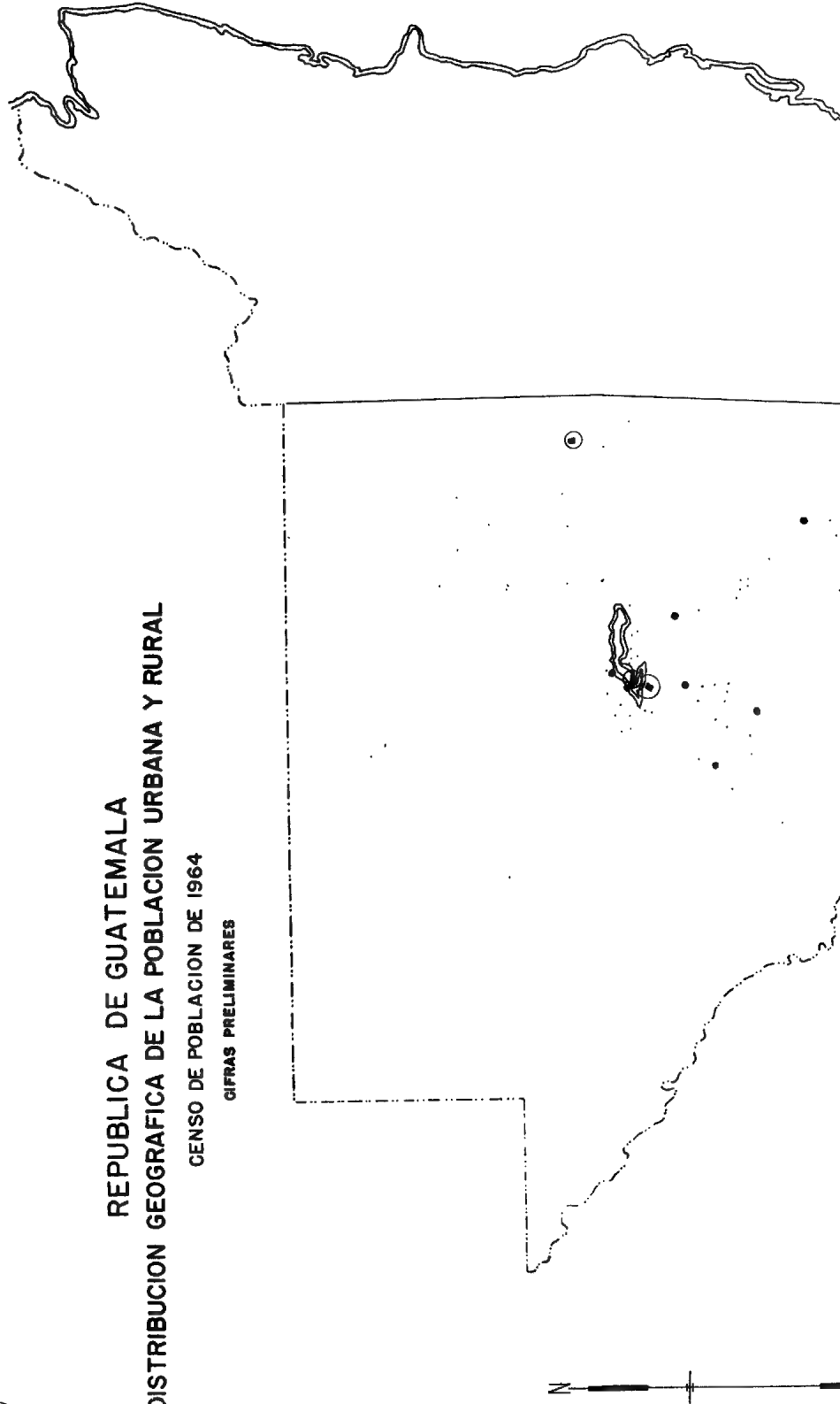




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DISTRIBUCION GEOGRAFICA DE LA POBLACION URBANA Y RURAL
CENSO DE POBLACION DE 1964
CIFRAS PRELIMINARES



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V. Politics and Government

A. Current Problems

Guatemala's major problems center on the shortage of skilled labor, extensive unemployment and underemployment, a high rate of illiteracy, limited economic and social mobility, and active insurgency. Half the population, the Indians, live outside the money economy in subsistence agriculture, and the bulk of the other half exist in only slightly better conditions as rural peasants or urban poor.

President Mendez Montenegro, who came to office on 1 July 1966, is under pressure to implement political, social, and economic reforms to alleviate some of Guatemala's problems without drastically upsetting the status quo. To maintain stability he must initiate these reforms rapidly enough to retain the support of those who elected him, but he must also avoid offending the military and the economic elite who are conservative. Moreover, the President must continue to make headway against Communist-backed guerrillas in order to improve public confidence and to retain armed forces support. Any indication of softness toward the Communists or a drift further to the left than this regime now represents would probably lead to a military coup.

Mendez always faces the possibility that extreme rightists in the military may attempt to overthrow the government. In mid-1967 a threat to the Mendez regime developed in the guise of clandestine, rightist counter-insurgency groups. These organizations, composed of military men and civilian vigilantes, were effectively fighting Communist insurgency, but they were also indiscriminately killing other leftists including some of their political rivals in Mendez's Revolutionary Party. Some military leaders have reservations about or resent the President. He has made several successful moves to allay their fears such as his selection of ministers from outside his Revolutionary Party and the appointment of capable and esteemed officers as Minister of Defense, Vice Minister of Defense, and Army Commander.

Guatemala has fewer urgent economic problems than most Latin American countries even though export earnings are still vulnerable to downswings in world coffee and cotton prices. The quetzal is one of the world's most stable currencies, and the economy is becoming somewhat more diversified through increased production of sugar, beef, and cotton for export. Industrialization, while still in its initial stages, has

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proceeded far enough to provide certain types of consumer goods for home consumption and as exports to the Central American Common Market.

B. Structure of Government

1. Central Government

Guatemala is governed under a constitution which went into effect on 5 May 1966. Under its provisions the national government has three principal branches: executive, legislative, and judicial. In theory the constitutional structure embodies the principle of separation of powers and a system of checks and balances, but in practice the president exercises legislative and judicial as well as executive functions.

a. The Executive

Executive power is vested in the president, who may not serve more than one four-year term. If the president attempts to violate this rule and fails to call elections at the end of his term, Congress has the duty to call elections, and the army is required by law to withdraw its support from the president.

The president has very broad powers. The constitution gives him all powers not specifically granted to other authorities. The primary areas of presidential strength are the power to initiate and implement legislation, the power to suspend constitutional guarantees, and the power of appointment. Furthermore, the president has the power to veto legislation, to enforce all laws, to conduct international affairs, and to appoint all non-elective members of the government. He is also responsible for all matters relating to national defense and security.

The president is served by a new deliberative body, the Council of State, created by the 1966 constitution. It consists of representatives of the various branches of the government and of the business, professional, and labor communities. The Council of State meets whenever necessary to deliberate on national problems and to submit proposals for their solution to the president. It also serves as a sounding board for proposals being considered in Congress.

b. The Legislature

The unicameral national Congress of Guatemala is composed of 55 deputies. The constitution specifies that two

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deputies must be elected from each of the 23 electoral districts (22 departments and Guatemala City). If the population of an electoral district exceeds 200,000, another deputy is elected for every additional 100,000 inhabitants.

Ordinary congressional sessions begin on June 1 of each year and last four months. Approval of legislation requires a simple majority vote; a two-thirds majority is required for constitutional amendments. Approved legislation is sent to the president for consideration. If the president does not act on the proposed law within 15 days, it automatically becomes effective. Congress may override the presidential veto with a two-thirds majority vote.

The Congress conducts its business through committees; appointment to these is usually determined by the political strength of the party to which a congressman belongs rather than by seniority. In general, Guatemalan congressmen have been poorly prepared for their legislative duties and at times appear to have little understanding of the legislation on which they work.

Traditionally, the president of Guatemala and political party leaders have been able to exert substantial influence on the selection of congressmen, and often political cronies of the administration have been elected. Occasionally, however, conflicting political currents, personal jealousies, shifting loyalties, and lack of leadership have made it difficult for administrations to push through their legislative programs.

c. The Judiciary

The judiciary is composed of the Supreme Court of Justice, various subordinate courts, and five special courts. All military cases are settled by special military courts.

The Supreme Court of Justice is responsible for the administration of justice throughout Guatemala. The chief justice of the Supreme Court is also president of the Guatemalan judiciary; as such, he is responsible for the administration of the court system. The Supreme Court appoints all judges who are not elected. In addition, the court is responsible for determining the validity of election fraud claims.

The five special courts are: the Court of Amparo, a body which hears requests from the public to restrain the government from actions which threaten constitutional rights;

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the Court of Jurisdictional Conflict, which resolves disputes between administrative agencies or ordinary courts; the Court of Administrative Conflict, which hears conflicts arising from the application of administrative acts; the Court of Accounts, which examines irregularities in the expenditures of government funds; and the Constitutional Court, created under the new constitution, which has the power of judicial review.

2. Regional and Local Government

Each of Guatemala's 22 departments is headed by a governor, traditionally a military man, appointed by the president. The governor is responsible for public order, public records, advising both national and municipal officials, and supervision of the departmental units of the national police. He coordinates his activities relating to public order with the military commissioner, an official appointed to each department by the army.

Government at the departmental level is not highly developed. The department functions mainly as a regional supervisory device for overseeing the central government's programs. No policy is decided at the departmental level, nor are there departmental elections.

The only true self-government in the republic is at the municipio level. Municipios are rural governmental subdivisions roughly analogous to US counties or rural townships. Usually they are composed of an urban center (cabecera) and a number of rural divisions called cantones or aldeas. Irrespective of political changes at the national level, the rate of political modernization has been most uneven from municipio to municipio, and although the law provides for uniformity in the structure and operation of local government, there remain wide variations. Many Indian municipios have both a formal and an informal government structure in the form of civil and religious hierarchies.

The local Ladino governmental structure usually includes a mayor (alcalde), several councilmen, a legal adviser (síndico), a treasurer, a secretary, and a police chief. In mixed communities, there is an Indian civil-religious hierarchy operating under the general direction of Ladino officials. It is a decision-making institution in matters of strictly local concern and a vehicle for facilitating administrative and legal contacts between the Indian community and the official Ladino governing structure. The purely Indian communities demonstrate great diversity of organization.

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Many of the changes that have occurred in the administrative structure of municipios are traceable to the revolutionary period (1944-54), when the introduction of political parties, extensive voting, and other aspects of modernization in varying degrees brought about the destruction or at least modification of prevailing institutions. There is a trend toward increasing separation of the religious and political hierarchies, weakening of traditional elite groups, and substitution of parties and other new interest groups for the old leadership. The most pronounced changes are found in communities located on main highways or in the coffee and sugar producing areas.

C. Political Parties

Political parties in Guatemala are, for the most part, amorphous, unstable groups of opportunists who gather around a strong personality whom they hope will attract enough votes or assemble enough force to capture the highest political offices. Conspicuously absent within the parties is a well-defined ideology or consensus on public policy or national objectives. With little other than attraction toward a leader to hold political groups together, parties tend to rise and fall in accordance with his personal fortunes.

There are four legal political parties in the country: the Guatemalan Christian Democratic Party (Partido Democracia Cristiana Guatemalteca - DCG) which is attempting to represent the non-Communist left; the Revolutionary Party (Partido Revolucionaria - PR) which in recent months has moved from left-to-center to right-of-center; the Deomcratic Institutional Party (Partido Institucional Democrático - PID), and the National Liberation Movement (Movimiento de Liberación Nacional - MLN), both representing the extreme conservative and reactionary right.

The PR, since it was formed in 1957, has been the most active and possibly the most powerful political force in the history of the country. In its early days it included all elements of the left, ranging from the mildly socialist to the militantly Communist, a diversity which created party disunity. Following attempts by the Communists to make the PR a front for the clandestine Guatemalan Workers' Party (Partido Guatemalteco del Trabajo - PGT), the PR in December 1958 expelled extremist leftist members and reorganized to follow a program which is liberal, reformist, mildly nationalistic, and denunciatory toward Communism and other brands of extremism. The PR also favors private enterprise over state-directed development schemes. The party claims to be organized in 295 municipalities and to have a total membership

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of 85,000. Under the leadership of Julio Cesar Mendez Montenegro it won the last national elections and today as the ruling party in Guatemala, it has been moving steadily toward a rightist orientation.

The PID was established in 1964 by the then incumbent military junta to serve as the focal point of a coalition with the PR and the MLN. The scheme, which fell through, was for these three parties to unite in backing a single candidate for the presidency. Its leaders are politically conservative and inexperienced, and as an artificially created party it receives considerable criticism and fails to attract a sincere following. It limps along and hardly appears to be viable. During the national election campaign in 1966, the PID campaigned on the promise of eventual progress in Guatemala, if only a PID regime were allowed to take office to continue the projects which the military government had initiated. The junta itself avoided direct endorsement of the PID. The PID candidate in 1966 was Juan de Dios Aguilar, a colonel and civil engineer, who was unable to successfully counter the criticism of the other two parties that he was the hand-picked candidate of the junta.

The MLN was formed in 1960 when its followers split from the old National Democratic Movement of Castillo Armas. The MLN is right-wing conservative and violently against any party of the left, particularly the Communists. The MLN's support lies principally in Guatemala's rural departments and in the well-to-do neighborhoods of the major cities. In the national election campaign of 1966 its candidate was Colonel Miguel Angel Ponciano, a former defense minister and army commandant. It adopted an exaggerated anti-Communism as its platform keynote, together with strong overtones in favor of military government, support for major landed and commercial interests, and a strong defense of church rights. The MLN continues to have a powerful influence today by prodding President Mendez into strong action against Communist and other insurgents and by conducting its own counter-terrorist actions.

The DCG came to life with the regime's permission in May 1967 after a long period of dormancy. Its apparent purpose is to provide a rallying point for the non-Communist left which is no longer supplied by the PR.

D. Current Administration

The current president of Guatemala is Julio Cesar Mendez Montenegro, a 50-year-old lawyer and educator, whose political

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ability before assuming office was largely unknown. Many observers consider him a brilliant, articulate man. His political orientation has been described as left-of-center, but he considers himself a moderate. He is popular with intellectual groups, primarily because he was formerly Dean of San Carlos University Law School.

The inauguration of Mendez on 1 July 1966 marked a return to a constitutionally elected government. Even though Mendez did not receive a strong popular mandate, his party (Revolutionary Party) was able to win 30 of the 55 seats in Congress to 20 for the Institutional Democratic Party (PID) and 5 for the National Liberation Movement (MLN). Mendez had the advantage of assuming power with few political enemies and has enjoyed considerable support from the Congress thus far in his administration. He eventually may be in for trouble, however, because his party is not entirely united behind him, and he must make effective use of patronage and pressure to secure approval of any long range programs.

President Mendez formed a moderate, largely nonpartisan cabinet. Of the 10 cabinet members, only the ministers of government, agriculture, and economy and social welfare are members of the PR. None are clearly tied to extremist groups or policies or with either of the two opposition parties. The cabinet members have close personal relations with the President. For the most part, the men chosen are considered honest and represent all the important areas of the country.

No major reform programs have been introduced as yet by the Mendez government. The legislative program has been limited to specialized economic laws. The government's major attention is fixed on combatting guerrilla activity. Conservatives are still demanding more effective government action against the insurgents, while liberals and supporters of the ruling Revolutionary Party fear that the security forces have already gone too far.

The state of siege instituted in Guatemala in November 1966 because of Communist insurgency and terrorism was replaced on 28 February 1967 by a lesser "state of alert." Bowing to congressional pressure, the government lifted the state of alert on 29 April 1967. Responsibility for internal security now rests with the civilian Minister of Government rather than the Minister of Defense.

The decisions to make these moves were regarded by the public as steps toward "normalcy." Although designed to demonstrate the administration's confidence to the people,

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the change is probably more illusory than substantive. It had considerable political motivation, because the Revolutionary Party feared that President Mendez was being increasingly dominated by the military.

E. Foreign Relations

Guatemalan foreign policy reflects the country's traditional close relationships with neighboring Central American republics, its geographic and economic position vis-a-vis the United States, and the demands of the political and economic situation. Guatemala has historically been a leader of the movement toward Central American political and economic integration, has been friendly toward the US (except under Arévalo and Arbenz), and has cooperated with the US and the West in international organizations.

Guatemalan policy toward the US has been characterized by a frustration bred of long dependence upon the US for its political and economic security. Despite a deterioration in Guatemalan-US relations during the nationalist revolutionary governments (1944-54), Guatemala now supports most positions taken by the US on international issues.

Guatemala has no diplomatic relations with Communist countries, including Cuba, and economic contacts are insignificant. The Communist party is outlawed, and the government attempts to maintain strict control over travel to Communist nations.

Relations between the Castro government and Guatemala were tense from the very beginning. President Ydigoras found it politically convenient to blame Guatemalan unrest on Cuba, and there followed a series of reciprocal charges of aggression between the two governments. The role ascribed to Ydigoras in the April 1961 Bay of Pigs invasion served to further embitter relations. In January 1962 Guatemala voted for all the US-supported resolutions against the Castro regime at the Punta del Este meeting of the OAS. Each country harbors exiles from the other. Various Cuban-supported organizations have attempted to secure Guatemalan support for a government in exile and for training bases.

Guatemala traditionally has been in the forefront of the movement for Central American political unification and economic integration. Guatemala regards itself as at least first among equals in the Central American community and makes efforts to remain in the vanguard by presenting proposals for Central American action and organization.

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Guatemala's role as leader in the movement, however, has fostered some distrust and suspicion of its motives among the other Central American countries.

The issue of British Honduras (Belize) has been a popular symbol of nationalistic aspiration for Guatemala. Guatemalan claims to this territory go back to the period of Spanish colonial rule, but a recent surge of nationalism has made the issue more important than previously. All administrations since 1945 have pressed the Guatemalan claim before the United Nations and the OAS, and the Guatemalan Constituent Assembly in August 1964 approved a resolution reaffirming Guatemala's "indisputable rights" to the territory. These maneuvers have embarrassed the US in its handling of hemispheric problems and have caused some resentment in Mexico, which has a counterclaim to the northern half of British Honduras. In 1963, Guatemala broke diplomatic relations with the United Kingdom in connection with the Constitutional Conference which gave internal self-government to British Honduras. Negotiations through the good offices of the US are being held between the UK and Guatemalan representatives in a renewed attempt to settle the claim, and the two countries have agreed to resume diplomatic relations.

Relations with neighboring Mexico are generally friendly but occasionally become strained. For the better part of 1959, diplomatic relations between the countries were severed following a Guatemalan Air Force attack on Mexican fishing trawlers reportedly poaching in Guatemalan waters. In 1961, Guatemala brought charges in the UN and the OAS that Cuban troops were being trained on Mexican soil preparatory to invading Guatemala. Relations between the two countries have improved since the recent exchange of visits between Mexican President Diaz Ordaz and Guatemalan President Mendez and the Mexican agreement to control arms smuggling to insurgents in Guatemala.

Guatemalan relations with the other nations of the hemisphere fluctuate according to changes in administrations and according to the types of government of the other countries. It has no particular recognition doctrine and usually acknowledges Latin American governments brought into power by coup after a few other nations in the hemisphere have extended recognition.

Relations with countries outside the Western Hemisphere are limited. The German Federal Republic, however, is an important buyer of Guatemalan coffee and has granted technical and economic assistance on a small scale.

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F. Subversion and Insurgency

1. General

Guatemala is vulnerable to foreign as well as to domestic subversion. The seeds of subversion are found in Guatemala's socioeconomic underdevelopment. Its population is sharply divided racially and culturally; high social and educational barriers separate the classes; and an extreme disparity in opportunity and living standards exists between the upper and lower sectors of society. The wealthy class exhibits virtually no interest in the collective welfare of the nation; and the population as a whole shows a low level of political maturity.

Within the small part of the population which is literate, politically conscious, or active, a high percentage is actually or potentially subversive. In Guatemalan politics, aspirations to power cannot usually be realized by an honest and legal bid for leadership. The general populace does not participate in politics, and the army is often the key element in getting and holding political power.

During the decade after the 1944 revolution, the Communists were able to exploit the social disunity and political backwardness of Guatemala and to capture the leadership of groups which were entering politics for the first time. Because the country was once under strong Communist influence and continues to have vulnerabilities, international Communist leaders still regard Guatemala as one of their prime targets in the Western Hemisphere.

2. Communist Subversion

Communism in Guatemala was born with the revolution of 1944 in which dictator Ubico was overthrown. A small Communist group which had existed during the 1920's was crushed by President Ubico in 1932. The handful who avoided firing squads and survived lengthy prison sentences played no important part in the revolution and only a minor role in the events that followed.

Among the many Guatemalans who came back from exile in 1944 were a few who had become associated with Communist movements in their country of exile. These were joined by a sizable group of Communists from other Central American countries who now found haven in Guatemala.

Many of the basic elements favorable for Communist

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subversion remain. Demand for social and economic reform is growing stronger and is not being met rapidly enough by the current anti-Communist regime. The Communist party continues to have some influence with the urban middle class, since it backs popular causes and poses as the apostle of social progress. While on given issues the party has the potential for commanding support from people who are not normally Communist sympathizers, the naivete of many Guatemalans concerning Communism has considerably lessened in recent years.

Today, the PGT (Communist Party) operates illegally and struggles to survive under a hostile regime. The American Embassy estimated in early 1967 that the PGT has a membership of 800 to 900 and about 2,000 sympathizers. The Central Committee of the PGT has stated that the total number of active members who fulfill all party obligations does not exceed 400. The effective strength of the party has been weakened considerably by suppressive police action and also by its failure to maintain the leadership of all anti-government activity. The PGT's Central Committee has 21 members, and other committees exist on the departmental, municipal, and sectional levels. National commissions of Communists exist for labor, youth, peasants, organization, propaganda, women, and military affairs. The military commission is responsible for the planning and waging of guerrilla warfare and terrorism. It has secret cells operating separately from the other PGT cells.

The PGT has also had difficulty in the fields of ideology and strategy. Although PGT members active in extremist bands champion the use of violence, some PGT leaders seem to favor peaceful revolution and are reluctant to take any strong stand either for or against violence, thus reducing overall PGT influence among extremist groups. Furthermore, there is evidence that despite the PGT's official endorsement of the Soviet position in the Sino-Soviet conflict, a small pro-Chinese faction has developed within the party.

3. The Guerrilla Movement

a. General

Guerrilla/terrorist forces and their activities against persons and installations in Guatemala are recognized as a danger but not as an immediate threat of sufficient strength to destroy confidence in the Guatemalan Government. Guerrilla terrorist activities are significant because they keep the

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administration under heavy pressure and could shatter the fragile framework of constitutional government by provoking another direct military intervention.

b. Organization and Strength

The current Guatemalan guerrilla movement is dominated by two groups, the 13th of November Movement (MR-13) of Marco Antonio Yon Sosa and the Rebel Armed Forces (FAR) now led by Julio Cesar Macias Mayora (alias Cesar Montes). As of April 1967, the strength of the hard core guerrillas in Guatemala was estimated to number around 300; 250 of these belong to the FAR, while only 50 are members of the MR-13. Their greatest strength is concentrated in urban areas, particularly in Guatemala City where an estimated 300 university students belong to the resistance units on a part-time basis. The number of part-time guerrillas, sympathizers, and support personnel available to the FAR is estimated at 1,000; and probably another 50-75 men are engaged in support activities for the MR-13. The members of these organizations are divided into guerrilla units, support units, and "resistance" (urban sabotage and terrorism) units.

The MR-13 under the leadership of Yon Sosa has been ideologically influenced by the Fourth International and the Mexican Trotskyites. The FAR, on the other hand, is aligned with the Guatemalan Communist Party (PGT) and is supported by Cuban funds. At present, the FAR is split into two factions. The radical pro-Cuban group of the FAR, led by Gabriel Salazar and José María Ortiz Vides, favors emasculation or destruction of the PGT and the emergence of the FAR as spokesman for the Guatemalan Communist revolutionary movement. The other FAR faction, to which Cesar Montes apparently belongs, realizes that an open split between the PGT and the FAR would seriously damage the already weakened and disorganized movement.

At the same time the PGT is also divided into two factions, with the majority favoring continued armed violence (though resentful of Cuban interference), and the minority favoring peaceful co-existence. During late March 1967, the PGT Central Committee decided to form its own guerrilla force, the first unit of which would be organized in the western region of San Marcos.

Though the area of operation of the guerrilla units has not been clearly defined, the MR-13 has concentrated its activities, for the most part, in the department of Izabal. The FAR operates in the Zacapa area, with some influence

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extending into El Progreso, Baja Verapaz, Escuintla, and Chiquimula.

c. Support Facilities and Mechanisms

The external flow of arms and military supplies for the guerrilla forces reportedly enters clandestinely across the border from Mexico. Occasional courier traffic has been reported between Guatemala and Cuba, via Mexico, for the purpose of bringing money and propaganda into Guatemala. It is believed, however, that the bulk of the weapons and ammunition in possession of the guerrillas has been obtained locally from various sources, particularly from raids on police and army patrols. Most of the weapons consist of M-1 rifles and carbines, Mauser rifles, and Thompson sub-machine guns, plus a miscellaneous assortment of other small arms.

There are reports that several small contingents of Guatemalans went to Cuba for guerrilla training as early as 1961. During the period 1961-67, some 243 Guatemalans are thought to have received guerrilla training in Cuba.

Funds for the guerrilla/terrorist forces have been supplied by kidnappings, extortion, and robbery. The proceeds from these activities during the period 1965-67 is estimated to amount to approximately two million dollars. Though it is known that the Cubans are financially aiding PGT/FAR activities, details regarding the extent of Cuban involvement have been difficult to establish.

It is known that the PGT/FAR maintains radio communications with Cuba. The military forces have captured several radio receivers, but only one radio transmitter has been captured to date.

d. Fighting Capability and Tactics

The FAR, when operating in rural areas, follows classic Cuban methods, concentrating on hit and run attacks and evasion by constant changing of the location of their camps. The FAR has responded to a recent surge in army pressure in the rural areas by attempting to evade direct confrontation with the army and by concentrating on the organization of terrorist units in Guatemala City and other urban areas.

G. Counterinsurgency

By mid-1967 the dimensions of the Communist insurgency threat had been reduced. Three factors were primarily

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responsible for this trend: 1. Increasingly aggressive action by the security forces, particularly by the army in Zacapa department; 2. Effective action by clandestine counter-terrorist groups; and 3. The apparent organizational and internal weaknesses in the FAR and the PGT.

At least five army companies plus other detachments have remained continuously in the field in the Zacapa/Izabal area since October 1966 on search and destroy missions. This has had telling effect on the guerrillas and has reduced their capacity for action. The army has succeeded in isolating guerrillas units and in severely damaging their supply system. As a result, the guerrillas are suffering from low morale, lack of weapons, and a melting away of peasant support. Most of the rural area outside of the Sierra de las Minas was considered pacified in mid-1967.

By the end of May 1967 special counterterrorist squads composed of members of the armed forces, police, and rightist civilians reportedly were taking a heavy toll among leftist insurgents by operating rapidly and summarily in a clandestine manner. The counterterrorism has been conducted under the cover of heavy propaganda attributing the vigilantism to anti-Communist groups, such as Mano Blanca (Movimiento de Acción Nacional Organizado), as well as to fictional cover groups such as NOA (Nueva Organización Anti-Comunista), RAYO (full name not known), CRAG (full name not known), CADEG (Consejo Anti-Comunista de Guatemala), etc. President Mendez is aware of the activities of these squads and is willing to gamble that they will not get out of hand. There is some concern that Colonel Arana in Zacapa department is using the counter-terrorist movement to cloak a drive for power and possibly may be planning a coup.

The general public is calm and has accepted the need for counterterrorism as a weapon to control the insurgents. Because of the success against the insurgents, there are signs of growing public confidence in the military, police, and government as a whole.

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~~SECRET~~VI. EconomyA. General

Guatemala has an agrarian-based economy dependent primarily on the production of coffee for export. During most of the post-World War II period, the consumption of the majority of the population has shown little growth. In the 1950's, the growth of the economy was about equal to the increase in population (a little over 3 percent annually). This slow growth was the result of the uncertainties created by the policies of the leftist-oriented government of President Jacobo Arbenz (1951-54), a steady fall in world prices for coffee after 1956, and a low level of public investment. Since 1961, however, the economy has grown rapidly due to increased export volumes of cotton and sugar and a partial recovery in world market prices for coffee. Expansion of exports has been accompanied by the rapid growth of the country's small industrial sector under the stimulus of the Central American Common Market (CACM)* and government encouragement of private foreign investment.

Gross national product (GNP) for 1966 is estimated at US \$1.5 billion, or about \$325 per capita -- about 5 percent above the average for the five Central American countries but about 15 percent below Costa Rica, the most prosperous of the five.

Natural resources in Guatemala consist primarily of agricultural land and large forest reserves. Although the government has actively encouraged the expansion of cropland, only about 30 percent of the total land area is used for agricultural purposes and per capita utilization is one of the lowest in Latin America. Forestry activities account for less than 1 percent of GNP. Most of the forest potential is located in the department of Petén, which accounts for nearly one-third of the Guatemalan land area but less than 1 percent of the population. There are no coal or petroleum reserves in Guatemala and hydroelectric power potential is the only natural energy source. Known mineral deposits consist of small deposits of iron ore, lead, zinc, antimony, and silver, large deposits of nickel north of Lake Izabal, and sulphur in the southeastern department of

* CACM, which was formed in 1961, became a free trade area between member countries in mid-1966. In addition to Guatemala, CACM includes Costa Rica, El Salvador, Honduras, and Nicaragua.

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Santa Rosa. Exports of nickel and sulphur are scheduled to begin in 1968.

B. Income Distribution and Labor

In 1962, about 73 percent of the population subsisted on an average annual per capita income of about \$80, accounting, as a group, for 22 percent of total national income. Another 20 percent of the population received an average annual per capita income of \$285 that accounted for 21 percent of total national income. The richest 7 percent of the population received an average per capita income of \$2,150, or 57 percent of the total.

The rapid economic growth since 1961 has contributed to increased employment and income but only about one-third of the labor force is estimated to be employed on a full year basis. Minimum wage laws, price supports for food crops, and agrarian and tax reforms introduced since 1961 have tended to lessen income disparities, but their impact on the income of most of the poor has been minor. Success in raising income levels of the impoverished Indian half of the population is restrained by marked cultural barriers between them and the rest of the population. Little has been accomplished, moreover, to raise the generally low level of productivity of the labor force by improving literacy or the health of the population. About 63 percent of the population is illiterate, a level exceeded in Latin America only by Haiti. The generally poor state of health of the population -- life expectancy is the third shortest in Latin America -- is attributable to low food consumption (about 2,000 calories per day) and lack of adequate medical and sanitation facilities.

C. Agriculture

Agriculture employs more than two-thirds of the labor force and, in 1965, accounted for 28 percent of GNP. More than half of the value of agricultural activity is carried out by only one-tenth of the nation's farmers producing export crops on about one-fifth of the cropland.

Cultivation of coffee for export is centered on the southern Pacific mountain slopes. Coffee is grown by many farmers, but a small number of large plantations produce most of the output. Coffee output generally has been stable since 1959, but its contribution to total export earnings has declined from two-thirds in 1960 to less than half in 1966. This reduction is attributable largely to the rapid expansion of cotton cultivation. Cotton production, which increased

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400 percent in 1961-65, is centered on the Pacific coastal plain in the departments of Escuintla and Retalhuleu. Cotton exports rose from 5 percent of total exports in 1960 to almost 20 percent in 1966.

Under the stimulus of increased quotas to the high-priced US market, production of sugar also has expanded rapidly. Sugar exports were equivalent to 3 percent of total exports in 1966, up from less than 1 percent in 1960. Sugar-cane is grown primarily on large plantations in the department of Escuintla. Production of bananas, which before 1961 was the second most important export, has been curtailed by a combination of adverse weather, plant disease, and weak market prices. In 1966, banana exports accounted for less than 2 percent of total exports. The US-owned United Fruit Company, the major exporter, has withdrawn its operations from the Pacific coastal area and is concentrating on the development of 16,000 acres at Bananera (15°28'N 88°50'W) on the Caribbean coast. Exports of meat and chicle also have grown rapidly since 1960, but their contribution to total exports is small. Cultivation of rubber, which is centered in the department of Retalhuleu, also has grown rapidly since 1960 to provide raw materials for a developing rubber products industry in Guatemala City.

In contrast to the export sector, food supplies are provided by small farms who employ traditional, rudimentary techniques. Corn and beans are grown throughout the country as a subsistence crop by almost all farmers. Rice is grown principally in Pacific coastal areas. Potatoes and wheat are cultivated at high elevations in the mountainous interior.

The agricultural policy of the government in the 1960's has been to promote self-sufficiency in major food crops and the expansion of export crops. Output of food crops has increased at least twice as fast as population since 1960, and except for wheat, milk, beef, and occasionally corn and beans, Guatemala now is self-sufficient in major food commodities. The increase in food production since 1960 is the result primarily of increased acreage brought under cultivation through colonization and resettlement projects on government-owned lands. The government also has acted to stimulate agriculture by providing tariff protection from competing imports (except for those from CACM countries), tax relief for investments in agriculture, and price supports. Government research and technical assistance provided farmers is small; expenditures affecting agriculture account for one-tenth of central government outlays.

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D. Industry and Electric Power

Guatemala has the largest industrial sector in Central America, but this sector is still at a rudimentary stage of development. Manufacturing industries accounted for 15 percent of GNP in 1965 and employed about 12 percent of the labor force.

Manufacturing, at least one-third of which is carried out in traditional handicraft industries, reflects the dominance of agriculture in the country's resource base. Food processing, and the production of beverages, textiles, clothing, and footwear account for about 70 percent of output. About three-fourths of all manufacturing is located in Guatemala City. The only other major concentration of industry is centered in the western cities of Quetzaltenango and Retalhuleu.

Expansion of manufacturing capacity in the 1960's has been directed to cotton textiles and clothing and the development of industries to produce intermediate goods, mainly construction materials and fuels. Included among producers of intermediate goods are a cement factory, a steel-fabricating plant producing galvanized sheets and tubes, and a glass factory, all of which are located in Guatemala City. Other producers of intermediate goods include an insecticides plant at Retalhuleu and two oil refineries. The refinery at Matías de Gálvez is jointly owned by Standard Oil of California and Shell, and the refinery at Escuintla is owned by Texaco. Guatemala's largest industrial enterprise is a rubber products plant located near Guatemala City that was developed primarily to provide tires to the CACM market. Major investment plans for 1967 include construction of a pulp and paper plant, a chemical complex to produce caustic soda, sulphuric acid, and rayon, and several new textile mills.

The rapid increase in manufacturing output since 1960 has been spurred by increased export opportunities associated with the development of CACM, rapidly rising consumer demand, and tax incentives provided to investors. Development of industry, however, continues to be restrained by the low purchasing power of the small population, the country's rudimentary transportation network, limited raw materials and fuels, and a shortage of managerial talent.

Electric power has not been developed in Guatemala as rapidly as in most other Central American countries. Installed capacity of 114,000 kw in 1965 provided per capita electric power output of only 110 kilowatt hours, or almost 40 percent

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below the average for Central America. More than three-fourths of capacity is owned by the Empresa Eléctrica de Guatemala, a subsidiary of the US-owned American and Foreign Power Company. This company provides power to the capital and surrounding areas, including Escuintla. The only other major source of power is an autonomous state agency, the National Electrification Institute (Instituto Nacional de Electrificación -- INDE), established to provide power to the remainder of the country. INDE's capacity is concentrated around Quetzaltenango, Escuintla, and Los Esclavos (14°15'N 90°17'W) in the department of Santa Rosa. Plans for a large increase in capacity to be developed by INDE include a 60,000-kilowatt hydroelectric installation at Jurun-Marinalá (14°18'N 90°42'W) in the department of Escuintla, and a hydroelectric complex at Lake Atitlán that will ultimately have a capacity of 300,000 kilowatts.

E. International Economic Relations

Performance of the Guatemalan economy is linked closely to that of foreign trade. Export earnings, which were equivalent to 15 percent of GNP in 1965, are a major source of income for Guatemalan consumers of domestically produced goods. The principal exports are agricultural products, including coffee, cotton, sugar, bananas, and meat. Manufactured goods, including textiles and clothing, perfume oils, and paper and rubber products, represent less than one-fifth of exports. Guatemala depends almost entirely on imports to satisfy requirements for capital goods, which accounted for 28 percent of the total imports in 1965. Raw materials imports accounted for 33 percent of the total; fuels and lubricants, 6 percent; and consumer and other goods, 33 percent.

Imports (\$244 million in 1966) have exceeded exports (\$220 million in 1966) in every year since 1955. Although wide variations occurred from year to year, both exports and imports levelled off in the years 1956-62. During these years, export earnings stagnated primarily because of the fall in world prices for coffee and a decline in the production and export of bananas. After 1962, exports rose sharply because of a partial recovery of coffee prices and success in developing other exports, notably cotton, sugar, and a few manufactures. Imports also increased sharply after 1962 and continued to exceed exports by an average of more than \$30 million in 1963-66. This reflects the spilling over into imports of the demand created by rising export earnings and the high level of private sector investment activity.

Since 1962, direct foreign investment and other long-term private capital inflows and short-term credits provided Guatemalan importers by foreign suppliers have been the

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principal means of financing trade and service deficits. Foreign economic assistance to the Guatemalan public sector since 1962 has not been large. Major international lending agencies have been unwilling to extend new loans because Guatemalan public investment planning and execution has been deficient and because the Guatemalan Government until recently refused to recognize the validity of some of its outstanding foreign obligations. Debt servicing requirements on the public external debt, equivalent to 7 percent of export earnings in 1965, are not onerous by Latin American standards.

Guatemala's leading trading partner traditionally has been the United States, but the US share of the Guatemalan market has declined since the early 1950's. In 1965, the United States accounted for 37 percent of Guatemalan exports and 42 percent of its imports. The formation of CACM in 1961 and the initiation of crude oil imports from Venezuela in 1963 has raised the Latin American share of Guatemalan trade rapidly. In 1965, almost 21 percent of Guatemalan exports were supplied to other Latin American countries, and almost 20 percent of imports were from them. The generally favorable terms of suppliers' credit offered by Western Europe and Japan have raised their share of Guatemalan trade to 37 percent of exports in 1965 and 33 percent of imports. Trade with Communist countries has been prohibited by law since 1955.

F. The Government in the Economy

Traditionally, the private sector has been the primary source of development in Guatemala. Public influence in the economy has been less extensive than generally is true in Latin America. Most public investment has been for the development of highways by the Ministry of Communications and Public Works. General economic policy has been incorporated in development plans since 1956, but implementation has been spotty because of inadequate attention to project preparation, the failure to obtain foreign financing for public investment, and the failure of the central government to develop investable funds from budgetary operations.

The budget of the central government has shown a deficit in every year in the 1960's despite a rapid growth of revenues since 1963. The deficits have been caused primarily by a rapid growth in wages and other current payments. Public investment expenditures declined during the period. Indirect taxes account for most revenues. Revenues from income and property taxes in 1965 were less than 12 percent of total revenues.

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In contrast to most other Latin American governments, Guatemala has not developed an extensive network of governmental autonomous agencies to engage in economic development and the provision of goods and services. The most important governmental autonomous agencies are the Guatemalan Aviation Enterprise (Empresa Guatemalteca de Aviación -- AVIATECA), a merchant marine company (Flota Mercante Gran Centroamericana, S.A. -- FLOMERCA), the National Electricity Institute (Instituto Nacional de Electrificación -- INDE), two seaport authorities (Matías de Gálvez and Champerico) and a radio station (Radio Nacional). Several specialized public financial institutions also have been developed to promote increased domestic savings and greater access to credit facilities by the small and medium-sized investor. Public financial institutions include a central bank, the Bank of Guatemala (Banco de Guatemala); a mortgage bank, the National Mortgage Bank (Banco Hipotecario Nacional); a savings bank, the Workers' Bank (Banco de los Trabajadores); and three development banks, the National Agrarian Bank (Banco Nacional Agrario), the Production Development Institute (Instituto de Fomento de la Producción -- INFOP), and the Institute of Municipal Development (Instituto de Fomento Municipal -- INFOM). There are eight private commercial banks, including two that are foreign-owned -- the Bank of London and Montreal, and the Bank of America.

G. Prime Economic Targets

Because the most important economic activity in Guatemala -- agriculture -- is widely diffused, concentrations of strategic economic targets are limited primarily to ports, highways, electric power plants, and a few industrial installations. The two major sea ports on the Caribbean are Puerto Barrios, whose facilities are owned and operated by the International Railways of Central American (ICRA), a subsidiary of a US company, and the government-owned Matías de Gálvez. The two principal Pacific ports are San José, also owned by ICRA, and the government-owned Champerico. By volume of trade, Puerto Barrios and San José are the two most important ports.

There are three strategically important electric power facilities, all of which serve the capital. They are a 12,500 kw thermoelectric plant owned by Empresa Electrica at Lake Amatitlán (14°27'N 90°34'W), a thermoelectric plant of the same capacity and owned by INDE near El Guacalate (14°11'N 90°53'W), and the 13,000 kw hydroelectric plant owned by INDE at Los Esclavos.

Principal industrial targets include the refineries at Matías de Gálvez and Escuintla. Manufacturing enterprises of importance include the tire factory, cement plant, and steel products plant, all of which are located in Guatemala

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City. A sugar mill at Palo Gordo (14°30'N 91°25'W) east of Mazatenango (14°32'N 91°30'W) and one at Madre Tierra (14°10'N 90°53'W) near the capital also are important manufacturing facilities. The processing facilities at the nickel and sulphur mining sites also would be strategically important to the Guatemalan economy.

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VII. Transportation

A. General

Roads and trails are the most important means of communication and transportation in Guatemala as far as the vast majority of the population is concerned (see Texaco map of Guatemala). In terms of the country's national economy, however, railroads are more important. They carry the coffee, cotton, bananas, and other agricultural products of the interior to the coastal ports for export, and they return with imported manufactured goods to the population centers of the interior. In recent years, truck transportation has given the railroads increasing competition, and paved highways now parallel all of the major rail lines. Inland waterways are of only minor -- mostly local -- significance, and the few seaports are used almost exclusively for export and import as there is little coastal shipping. Air transportation is of vital importance to the otherwise largely isolated El Petén department, and most of the larger towns throughout the country are served by airfields. Only La Aurora Airport at Guatemala City handles international air traffic.

B. Roads and Trails

1. Road Net and Serviceability

Guatemala has approximately 7,600 miles of roads. Fewer than 1,500 miles are paved, however, and the remainder are mostly unpaved feeder roads, many of which are impassable in rainy weather. Southern Guatemala, in spite of its mountainous terrain, has a relatively dense network of roads connecting all the major towns and providing access to the seaports. In contrast, the vast, thinly settled northern part of the country, including El Petén department and the northern sections of Huehuetenango, El Quiché, Alta Verapaz, and Izabal departments, has a very sparse road network with not a single mile of paved highway.

The principal highways of Guatemala are the Inter-American Highway, extending from Mexico southeastward through the Central Highlands to El Salvador; the Pacific Highway, also extending from Mexico to El Salvador but running along the lower Pacific slopes of the Sierra Madre range; and the Interoceanic Highway, linking Guatemala City with the Caribbean port of Puerto Barrios and the Pacific port of San José.

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a. Inter-American Highway

The Inter-American Highway, CA-1, is part of the Pan American Highway system and extends from the Mexican border to the El Salvador border via Huehuetenango, Chimaltenango, Guatemala City, Cuilapa, and Jutiapa. It is the longest road in Guatemala, about 310 miles, and traverses the most populous part of the country. Because of the mountainous terrain it crosses, the highway has numerous curves, but steep gradients have generally been avoided. The roadway is asphalt surfaced for over half of its length, but there are two long, unpaved gravel stretches: one from the Mexican border to the vicinity of San Cristóbal in Totonicapán department, and the other from Barberena in Santa Rosa department to Asunción Mita in Jutiapa department. The paved part of the highway averages about 20 feet in width and is in good condition. Maintenance on the road is good, and the traffic flow is moderate to light.

From Cuauhtémoc in the Mexican state of Chiapas, the highway crosses the border into Guatemala and trends south-eastward to near Huehuetenango and then southward to San Cristóbal -- a total of about 100 miles. Approximately 12 miles east of the border, the highway passes for about 6 miles through the steep and narrow canyon of the Río Selegua, known as "El Tapón," the tap (see Figure 45). This has been one of the most difficult sections to construct and is still not completed to full width, but it is now generally passable. The steep cuts in the canyon wall along which the highway runs are subject to landslides during rainy weather. These slides may block the drainage ditches as well as the road, thus forcing water over the gravel surface of the roadway and causing severe erosion damage. The rest of the unpaved road to the vicinity of San Cristóbal is also subject to brief interruptions of traffic because of landslides.

The 115-mile stretch from near San Cristóbal to Guatemala City is paved. A paved road branches off the highway in the department of Sololá and zigzags down a steep, 2,000-foot escarpment to the shores of Lago de Atitlán (see Figure 46); it trends southeastward, climbs out of the lake basin and rejoins the main highway at Patzicía, Chimaltenango department, on the continental divide at about 5,900 feet above sea level. Another paved road branches off the highway in the vicinity of Chimaltenango and leads to Antigua Guatemala, the former colonial capital and a popular tourist attraction. The Inter-American Highway continues eastward to Guatemala City, which is situated in a basin at an elevation of about 5,000 feet.

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Figure 45. Inter-American Highway a short distance from the Mexican border.



Figure 46. Road leading to Lago de Atitlán from Inter-American Highway.

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From Guatemala City the road runs southeastward over a low pass out of the basin and then through rolling hills, gradually descending until, just before reaching the El Salvador border, it is well down in the warm country at about 1,600 feet above sea level. The first 34 miles from Guatemala City to Barberena are paved, as are the last 12 miles to the El Salvador border; the intervening 57 miles, although still unpaved, are being improved. The highway is passable at all times, but because of the lack of a hard surface over the long central section, many drivers prefer to travel from Guatemala City to El Salvador via National Route 19 (see Figure 47) passing through Jalapa to the north, even though this route also has a long unpaved stretch.

b. Pacific Highway

The Pacific Highway, also known as the Pacific Slope Highway, CA-2, is the shortest (about 215 miles long) and fastest route from Mexico across Guatemala to El Salvador. It is an asphalt-paved, two-lane, all-weather road varying from 22 to 26 feet in width and generally in good repair except for occasional potholes. The highway roughly parallels the coastline at a distance of about 30 miles inland on the western end and about 15 to 20 miles inland on the eastern end. From El Carmen on the Mexican border, it trends southward and connects with another paved road coming from the border town of Ciudad Tecún Umán (previously Ayutla). From this juncture the Pacific Highway runs generally eastward to Coatepeque, Mazatenango, and Escuintla.

Before reaching Mazatenango, the highway intersects National Route 9S, which extends from Quezaltenango, in the highlands, to the small port of Champerico on the coast, via Retalhuleu, the departmental capital. Route 9S is about 72 miles long, mostly asphalt surfaced in good condition; its upper section passes through numerous steep road cuts and a tunnel and is subject to blockage by rockslides. At Escuintla, the Pacific Highway intersects CA-9, the highway between Guatemala City and the seaport of San José. Most of this stretch of the Pacific Highway passes through flat farming country with extensive coffee plantations, fields of sugarcane, and fruit orchards. The flow of traffic over this section is light to moderate. Moving southeastward out of Escuintla to the El Salvador border the road continues through relatively flat farming country, almost at sea level. The area is fairly dry and has scattered gently rolling hills covered with grass, scrub, and small trees. Traffic through this section is light.

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Figure 47. National Route 19 between Sanarate and Jalapa.

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~~SECRET~~c. Interoceanic Highway

The northeastern section of the Interoceanic Highway, CA-9 -- the part between Puerto Barrios and Guatemala City -- is known as the Atlantic Highway. It is an asphalt-surfaced, two-lane road in good repair. The route is one of the most important in the country and carries considerable truck traffic to and from the Caribbean ports of Puerto Barrios and Matías de Gálvez. This highway is about 183 miles long and traverses sections of two distinct physiographic areas of Guatemala -- the valley of the Río Motagua and the Central Highlands.

The Atlantic Highway extends southward out of Puerto Barrios to a juncture with a short paved road that provides access to the new port of Matías de Gálvez. It then continues southeastward, curves to the southwest, and follows the north bank of the Río Motagua. In the hilly terrain along the southern flank of the Montañas del Mico the road passes through numerous deep cuts, which are potential bottlenecks. Continuing to the southwest, it makes a juncture with a short paved road leading to the town of Morales and to Bananera, the headquarters of the United Fruit Company. Farther to the southwest, a dirt road branches northwestward off the highway and crosses a low saddle in the Sierra de las Minas to the village of Mariscos on the southern shore of Lago de Izabal. As the main highway continues up the Motagua valley past Los Amates and to Río Hondo it crosses numerous bridges over streams draining the southern flank of the Sierra de las Minas. Along most of this part of the route a dense growth of medium-height trees, palms, and thick bushes provides excellent concealment. Near Río Hondo, a dirt and gravel road, National Route 20, branches off the highway and extends southward across a bridge over the Río Motagua, reaching Chiquimula in the mountains south of the valley; a short spur leads to Zacapa. Beyond Río Hondo, and for the remainder of its course within the Motagua valley up to El Rancho, the highway passes through an arid landscape reminiscent of southern California or Arizona. The vegetation is much sparser than that of the more humid downstream portion of the valley, and it affords fewer opportunities for concealment. In the vicinity of El Rancho the Atlantic Highway turns south, crosses a bridge over the Río Motagua, and climbs out of the valley through numerous steep road cuts into the Central Highlands. The remainder of the route to Guatemala City passes through terrain characterized by high mountain ridges and steep-sided valleys with densely wooded slopes.

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Southwestward out of Guatemala City, the Interoceanic Highway continues to the port of San José on the Pacific coast. Leaving Guatemala City the route descends through road cuts, passes the northwestern end of Lago de Amatitlán, and enters a steep defile between the Volcán de Agua and the Volcán de Pacaya. The highway follows southwestward along a swift-flowing stream to the vicinity of the town of Escuintla, about midway to the coast. Before reaching Escuintla, this stream turns to the southeast, but the road continues on to the southwest, crossing a small divide and paralleling the course of another stream. At Escuintla, the most important town between Guatemala City and San José, the Interoceanic Highway intersects CA-2, the Pacific Highway. Terrain conditions along the route change markedly beyond this point. The area between Guatemala City and Escuintla is mountainous and supports little agriculture or industry. In contrast, the increasingly flatter terrain south of Escuintla toward the coast supports considerable agriculture, with cotton and sugarcane the principal crops. Traffic flow is moderate to heavy on the section of the route between Guatemala City and Escuintla and somewhat lighter on the section between Escuintla and San José. Most of CA-9 south of Guatemala City is a good, two-lane, asphalt road.

d. Secondary Roads

Among the more important secondary roads providing access to central Guatemala is National Route 5, which trends northward from Guatemala City through the department of Baja Verapaz and most of Alta Verapaz. The road traverses mountainous terrain with ridge crests reaching elevations of 5,000 feet and intervening valleys and basins at elevations between 2,000 and 3,000 feet. It is asphalt surfaced for only about 15 miles going out of Guatemala City; the remaining 165-odd miles of road are mostly surfaced with a combination of soil, sand, and crushed rock. Many sections of the road are badly eroded, and deep ruts and washboard surfaces are common. The road is very narrow -- less than 15 feet in places -- and, because of the steep abutting terrain and sharp cliffs, passing other vehicles may be extremely dangerous. Landslides and soil slumps are frequent in many places because of streams flowing over and under the roadway. At Samalá, capital of the department of Baja Verapaz, Route 5 connects with the northern end of National Route 17 -- a rough, unpaved road that winds southeastward across the eastern Sierra de Chuacús for about 36 miles to a juncture with the Atlantic Highway near El Rancho. From Samalá, Route 5 continues northward to Cobán, capital of the department of Alta Verapaz, and then northeastward to within 10 miles of

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the border of the department of El Petén. Eventually the road will connect with another section of Route 5 which has already been constructed in El Petén and which leads from the northern bank of the Río de la Pasión to Flores. Traffic on Route 5 is very light.

At the village of San Julián, just north of the Alta Verapaz - Baja Verapaz border, National Route 7E branches off Route 5 and extends northeastward for about 82 miles to El Estor on Lago de Izabal. This road is about 15 to 20 feet wide. The first 10 miles has a surface of compacted gravel and soil; the remaining mileage is mostly rock surfaced and is extremely rough, especially the last few miles into El Estor. The road crosses innumerable small bridges and fords. A short distance out of San Julian the route enters the narrow Polochic valley, and for the next 30 miles it is dominated by high ridges. Farther downstream the valley broadens considerably. Vegetation is dense all along the valley. In the narrow part it consists principally of medium-height, closely spaced trees and bushes; farther to the east, where the valley broadens, the vegetation is more tropical, with various types of palm trees quite common. Much of the route is flanked by small cattle and hog farms, coffee plantations, and fields of sugarcane and maize. Numerous Indian huts parallel the roadway. A small army outpost is located on the route at Panzos. El Estor, at the end of the road, is served by three busses going to Cobán.

National Route 7W branches from Route 5 at the village of Santa Cruz Verapaz and extends westward for slightly over 100 miles to the town of Huehuetenango. The roadway is as narrow as 7 feet in places. The first 10 or 12 miles are surfaced with rock, soil, and an oil stabilizer that has a bituminous like appearance (see Figure 48). The remaining mileage is mainly soil and rock surfaced. The road traverses very high, mountainous terrain, winds in and out of deep valleys, and clings to rocky, precipitous slopes. Low clouds restrict visibility along many of the higher sections of the route, and the roadway becomes extremely slippery and dangerous when wet (see Figure 49). Vehicular traffic on the road is practically nil. Near the town of Sacapulas, in El Quiché department, the road makes a juncture with National Route 15 which runs southward through Santa Cruz del Quiché and Chichicastenango to join the Inter-American Highway at Los Encuentros. Route 15 is mostly soil and gravel surfaced and in some places is very rough (see Figure 50). Route 7W from Sacapulas to Huehuetenango has many hazardous blind curves and steep grades, and is subject to blockage by landslides.

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Figure 48. National Route 7W near Santa Cruz Verapaz, department at Alta Verapaz. Note water-filled ditches from heavy downpour.



Figure 49. National Route 7W a short distance from San Cristóbal Verapaz, department of Alta Verapaz. Low clouds obscure observation from the route.

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Figure 50. National Route 15 near San Pedro Jocopilas, department of El Quiché.

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The only road linking El Petén department with the rest of Guatemala is a single-lane dirt and gravel road extending northwestward from Modesto Méndez, at the head of navigation of the Río Sarstún, to Flores in the center of El Petén department via Poptún, a distance of approximately 115 miles (see Figures 51 and 52). The condition of the road is fair, although large potholes are numerous. The route crosses many small bridges; ferries are used for the broader streams. The road enters Flores, which is located on a small island in Lago Petén Itzá, by means of a causeway. On the southern shore of the lake, opposite Flores, are the villages of San Benito and Santa Elena; all three places have grown together into essentially one community. Another road leads eastward from San Benito about 55 miles to Melchor de Mencos near the British Honduras border. Most of this road is of compacted soil and gravel and is in good condition, but a 10- or 12-mile stretch near the center of the route is deeply rutted and pocked. San Benito has daily bus service to both Poptún and Melchor de Mencos.

Near the eastern end of Lago Petén Itzá, a dirt road branches off the Flores - Melchor de Mencos road and runs northward to the small settlement of Tikal, site of the ruins of a vast city of the ancient Mayas which is being restored in a joint project by the Guatemalan Government and the University Museum of Pennsylvania. The road penetrates an area of very dense forest. In some places huge trees have fallen across the road making temporary bypasses necessary. Sections of the road are in fair condition, but in many places there are large, deep mudholes that are impassable except for four-wheel drive vehicles. The road is almost impossible to traverse in rainy weather.

The El Petén portion of National Route 5 extends southwestward from San Benito for about 38 miles to the north bank of the Río de la Pasión, facing the town of Sayaxché. The road is about 15 feet wide. Its surface is compacted soil and rocks, in fair condition. The route winds through forested, hilly terrain until it reaches the vicinity of the village of La Libertad where the terrain is more open and scattered patches of small trees are interspersed with low, flat, grassy areas. A short road branches off to the west into La Libertad. The last 13 miles of this portion of Route 5 are still under construction. Eventually the road will connect with National Route 5 in Alta Verapaz department -- an all-weather road connecting Cobán, Salamá, and Guatemala City.

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Figure 51. Road connecting Flores, capital of department of El Petén, with Modesto Méndez on Río Sarstún.



Figure 52. Dense vegetation along Poptún - Flores road.

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2. Cross-Country Movement

Most of Guatemala is completely unsuitable for cross-country movement of wheeled vehicles. The steep mountains and deep canyons and valleys of the highlands preclude extensive cross-country movement throughout most of southern Guatemala. In the northern part of the country and in the Caribbean Lowlands, such movement is limited by dense forests. The Pacific Coastal Lowlands offer the best opportunities for cross-country movement of wheeled vehicles, but even in this region movement is limited by the entrenched streams flowing down from the Sierra Madre, and large swamps present obstacles in the lower sections. During the wet season, many areas that are normally passable are turned into quagmires by heavy rains.

3. Trails

Trails play an important role in the movement of goods to local markets in Guatemala, especially for the large rural Indian population which has traditionally shunned the use of the wheel and which relies heavily on human transport or muleback. Pack trails crisscross the densely populated highlands, often winding up astonishingly steep slopes. In the vast, sparsely settled forested lowlands trails are fewer, but take on added significance as the only available means of surface communication. Human carriers and mules progress very slowly over the slippery rocks on the trails in the mountains and even more slowly on the muddy, root-covered trails through the forests. On many of the lesser used trails, machetes are an absolute necessity for hacking away encroaching vegetation.

In El Petén, chicle gatherers have cut a great many short footpaths, but most of them have been abandoned and are probably completely overgrown. The following paragraphs deal with some of the longer, more permanent trails of the Petén Lowlands and Hills Region.

A number of important trails branch off the Modesto Méndez - Flores road. About 10 miles south of Poptún, at the village of San Luis, a trail extends eastward and crosses the border into British Honduras, where it joins trails leading to San Antonio Nuevo, which in turn is connected by road to Punta Gorda on the Gulf of Honduras. Another trail branching off the Modesto Méndez - Flores road extends from Poptún northwestward about 53 miles to Sayaxché on the south bank of the Río de la Pasión. Small airfields are located at both Poptún and Sayaxché.

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Tikal, the site of famous Mayan ruins, is the terminus of the road extending northward from Lago Petén Itzá. It is connected by trail to another archeological site, Uaxactún, about 4 miles farther north. A geologist traversing the route on foot from El Remate near Lago Petén Itzá to Uaxactún, a distance of a little over 30 miles, took 3 days for the trip because of the muddy condition of the road and trail. From Uaxactún a footpath continues northward for about 40 miles to Dos Lagunas, less than 10 miles from the Mexican border. Small airfields are located at Tikal, Uaxactún, and Dos Lagunas.

Dos Lagunas is also on a cart track that extends from Aguas Turbias, near the British Honduras - Guatemala - Mexico triborder point, to the village of Carmelita about 64 miles to the southwest. At Carmelita there is a small airstrip. Footpaths extend north from Carmelita to Paxbán on the Mexican border and connect with a road (current status unknown) running northward into the state of Campeche. Other footpaths extend northwestward from Carmelita into the almost completely unpopulated northwestern corner of El Petén, and southwestward to Paso Caballos on the Río San Pedro, which is an archeological site and has a small airstrip.

From La Libertad, a town about 20 miles southwest of Flores on National Route 5, a trail about 75 miles long extends northwestward to a lumber camp at El Ceibo on the Río San Pedro near the Mexican border. The first and last 10 or 15 miles of this trail are classified as cart track, the remainder as only footpath. The trail passes just to the south of Laguna San Diego, and it connects a number of otherwise completely isolated villages along its route. A small airstrip is located at La Libertad.

4. Vehicles

Guatemala has over 63,000 motor vehicles, including some 50,000 passenger automobiles and light panel trucks and over 13,000 larger trucks and buses (see Figure 53). In addition, it has about 7,500 motorcycles and 66,000 bicycles. The Ladinos use mules, bullock carts, and other animal-drawn vehicles extensively for local transport (see Figure 54). The Indians use their own backs; with a wooden carrying frame and a head line they may transport loads of 100 pounds or more (see Figures 55 through 57). Some of the Indians take their goods to market this way over incredibly long distances. The Indians of Totonicapán, for example, transport colorfully decorated wooden chests (their specialty) all the way to

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Figure 53. Typical examples of heavily loaded Guatemalan buses and trucks headed for market.



Figure 54. Ladino bullock cart on outskirts of Chichicastenango, department of El Quiché.

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Figure 55. Indians carrying goods to market in Chichicastenango.



Figure 56. Indians backing out of church for journey home after annual pilgrimage to Esquipulas, department of Chiquimula.

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Figure 57. Indians carrying heavy loads near Solola. Lago de Atitlán is visible in background.

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Chiquimula to market -- a distance of well over 100 miles.

C. Railroads

The relative importance of railroads in Guatemala has declined sharply in recent years because of greatly increased competition from buses and trucks. Paved highways now parallel all of the major rail lines. The Guatemala Division of the International Railways of Central America (IRCA-GD), which is owned by a US corporation, operates nearly all of the country's estimated 543 miles of narrow-gauge (3'00") track-age, including lines of the United Fruit Company plantation that are still in use. The government-owned Verapaz Railroad, which extended from Pancajché to Panzós in Alto Verapaz department, has recently been abandoned.

The main line of the IRCA-GD connects Puerto Barrios on the east coast with Guatemala City, Escuintla, Mazatenango, and Ciudad Tecún Umán on the Mexican border near the Pacific coast (see Figures 58 and 59). Branch lines connect Zacapa with Anguiatú on the El Salvador border, Escuintla with San José, Las Cruces with the port of Champerico, and Ciudad Tecún Umán with Ocos. In addition, a very short spur runs northward from the main line between Retalhuleu and Mazatenango to San Felipe.

The IRCA-GD also operates the 10-mile Compañía Agrícola de Guatemala (CAG) line from Río Bravo on the main line in Escuintla department to Pueblo Nuevo Tiquisate (former site of extensive United Fruit Company banana plantations) in the Pacific Coastal Lowlands. The CAG line may soon be abandoned.

The banana plantations in the lower valley of the Río Motagua in Izabal department are served by a United Fruit Company line that forms a loop about 24 miles long off the main line between Bananera and Quirigua. Another United Fruit Company track leaves the main line at Entre Ríos, some 10 miles south of Puerto Barrios, and goes through Eskimo and Hopi to Inca on the Río Motagua.

The main IRCA-GD rail line from Puerto Barrios to Guatemala City is the most heavily traveled line in Guatemala; it carries a major portion of Guatemala's export-import traffic as well as some of that of El Salvador. From Puerto Barrios to El Rancho, about 136 miles up the Río Motagua Valley, the line traverses relatively flat terrain with only moderate curves and grades. Beyond El Rancho it ascends the high central plateau and has numerous sharp curves and steep grades. From

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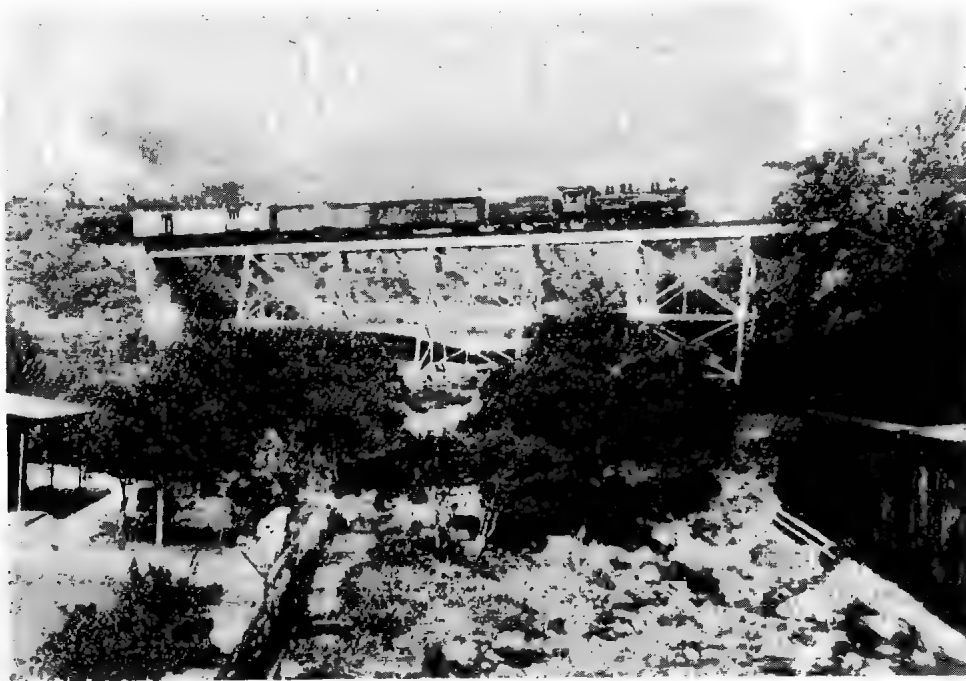


Figure 58. IRCA-GD train crossing bridge near Palín, department of Esquintla.

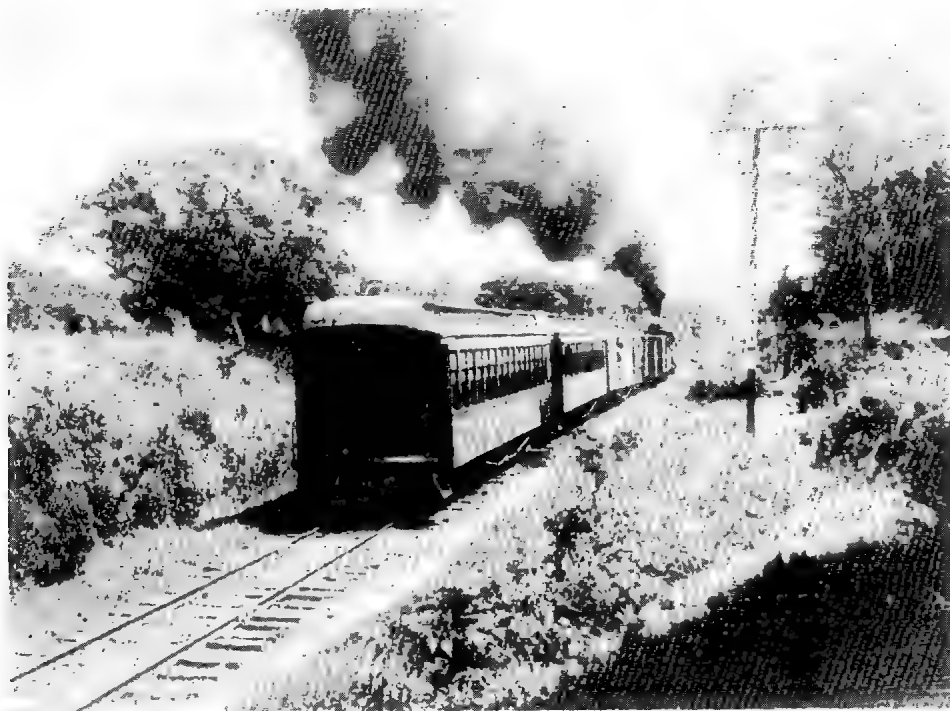


Figure 59. Passenger train near Retalhuleu.

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Guatemala City, the line extends southward over the Sierra Madre and then westward along the Pacific slope to the Mexican border. This section also has heavy traffic, as it serves the nation's richest agricultural area. Curves and steep grades are numerous as the line crosses the mountains but are fewer on the stretch to the Mexican border. Transloading facilities are located at Ciudad Tecún Umán for connection with the standard-gauge Mexican line that continues to the northwest.

The branch line to the port of San José carries only moderate traffic; it is used mostly for petroleum shipments and has no sharp curves or steep grades. The branch from Zacapa to Anguiatú, which connects with a Salvadoran railroad, also 3-foot gauge, and operated by the IRCA, carries a fair amount of El Salvador's coffee for export at Puerto Barrios. It traverses rugged terrain and is marked by sharp curves, steep grades, and numerous bridges and tunnels. Traffic on the other short railroad lines of the country is very light and primarily local.

There are about 120 locomotives -- both steam and diesel-electric engines -- and about 2,000 freight cars and passenger cars in service in Guatemala. Since then a program to convert to diesel engines has been in effect, but many of the old steam locomotives are still in use (see Figures 60 and 61).

The track structure of the rail system is light, but it is well maintained and in good condition. Most of the crossties are of native hardwood, and the remainder are of creosoted pine imported from the United States. Ballast consists mostly of river gravel, but in some places volcanic sand or crushed stone is used.

Important rail yards are located at Puerto Barrios, Zacapa, Guatemala City, Escuintla, and Pueblo Nuevo Tiquisate. They are all adequately equipped to handle current traffic demands. The major railroad repair facilities are at Guatemala City, Pueblo Nuevo Tiquisate, and Bananera.

D. Air Transport

Air transport has been of special importance in Guatemala because of the inadequacy of the country's highway and railroad systems, particularly in the remote northern areas. With the improvement of some of the highway network in recent years, local air traffic has suffered a decline, but for the vast Petén Lowlands and Hills Region it continues to provide a vital service. Guatemala has 82 usable airfields with

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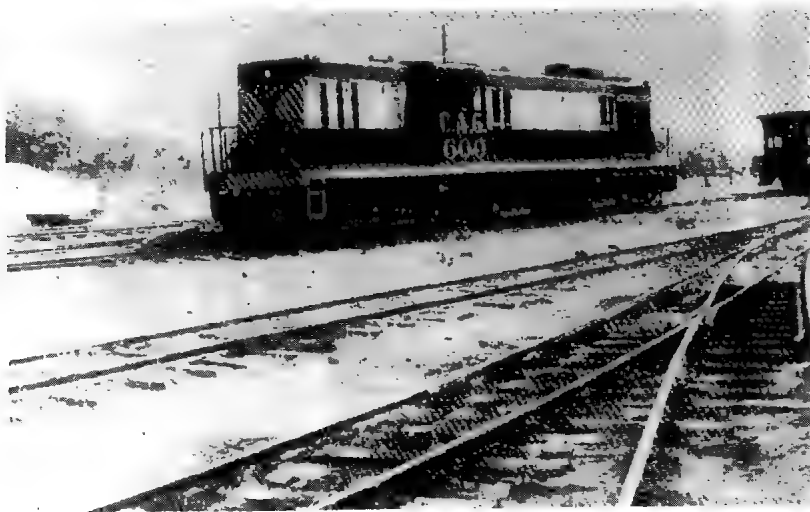


Figure 60. A diesel engine locomotive of Compañía Agrícola de Guatemala.

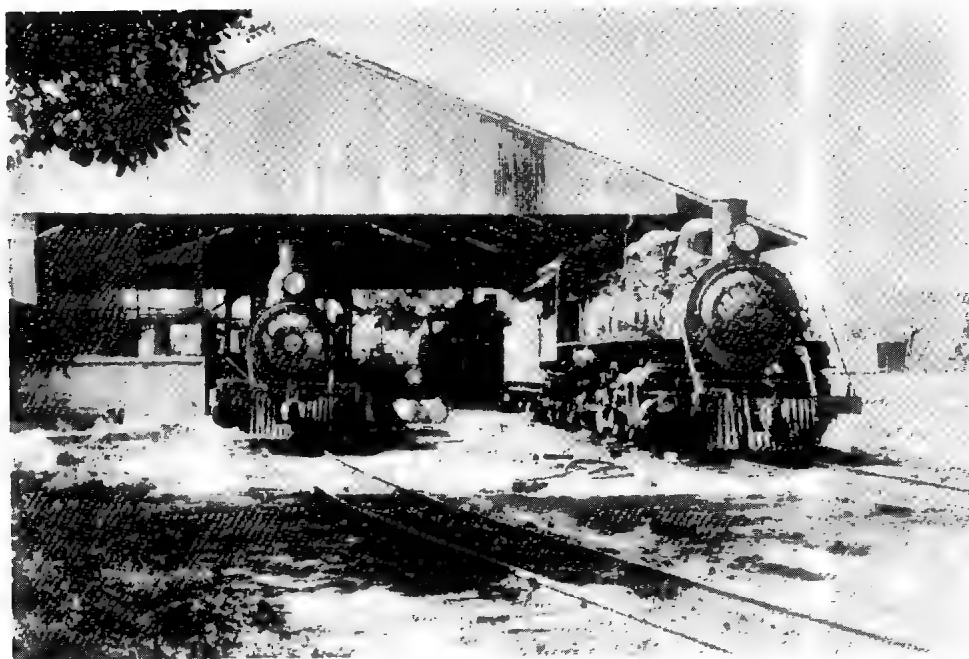


Figure 61. Steam locomotives at IRCA-GD terminal in Ciudad Tecún Umán on Mexican border.

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runways 2,000 feet or more in length, 12 usable airfields with runways under 2,000 feet in length, and some 44 known abandoned airfield sites that might serve as emergency landing places (see USAF Chart of Airfields and Seaplane Stations of the World, Vol 3-01).

The government-owned air carrier Empresa Guatemalteca de Aviación (AVIATECA) provides scheduled services to about 15 domestic points and operates international routes to New Orleans and Miami in the United States, Mexico City and Acapulco in Mexico, Tegucigalpa and San Pedro Sula in Honduras, and San Salvador in El Salvador. In addition, four foreign air carriers serve Guatemala on scheduled international flights.

AVIATECA's fleet consists of four Douglas DC-6Bs, one Douglas DC-4, three Douglas DC-3s, and two Curtiss C-46s. Over 200 other civil aircraft are registered in the country, mostly small, single-engine planes used in crop dusting, taxi service, or sport flying.

The greatest concentration of airfields is in the Pacific Coastal Lowlands, especially in the area between Escuintla and San José where there are many small strips used by crop-dusting aircraft. El Petén also has a relatively dense concentration of airfields. The largest area lacking in air facilities is the high Sierra de los Cuchumatanes in Huehuetenango and El Quiché departments.

Only four airfields have permanent, hard-surfaced runways: La Aurora (Guatemala City), Puerto Barrios, San José, and Retalhuleu. All of the other airfields have gravel, turf, or dirt runways (see Figure 62).

La Aurora airfield at Guatemala City has an asphalt runway 9,793 feet long. It is the largest airfield in Central America and the only one capable of sustained heavy jet operations. It serves as an important midpoint refueling stop between the Panama Canal Zone and the United States. The airfield is operated by the Guatemalan Government and is used jointly by the Guatemalan Air Force and international and domestic airlines. It is the main base of operations of AVIATECA.

The Puerto Barrios airfield has a concrete runway 6,000 feet long which is currently undergoing repairs. The airfield was damaged during a revolt in 1960, and because of a lack of funds little repair or maintenance has yet been done. A parallel taxiway can be used for landing DC-3s and smaller aircraft. AVIATECA formerly used the airfield for scheduled

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air operations, and occasionally oil companies have used it. It is currently being used by the Guatemalan Air Force.

San José and Retalhuleu airfields, with asphalt runways of 5,160 feet and 3,937 feet, respectively, are Guatemalan Air Force bases that are closed to civilian aircraft except in case of emergency.

Air transport is of particular importance in El Petén, where other means of transportation are generally lacking. Many of the airstrips there were constructed by firms engaged in the fruit and chicle trade. They were later improved by AVIATECA, but most of them still do not meet standards acceptable to the majority of modern airline operators. None of the strips have hard surfaces, and most of them are unserviceable in rainy weather. About 15 of the 23 or more El Petén airfields with runways over 2,000 feet in length are suitable, at least marginally, for DC-3 aircraft (see Figure 63). Carmelita, Flores, La Libertad, Poptún, and Uaxactún have radio aids and possibly some fuel and oil. Most of the others have no facilities. Some of the larger lakes in El Petén could conceivably be used by small amphibians or floatplanes.

E. Water Transport

1. Inland Waterways

Guatemala's inland waterways are of only local importance and play but a minor role in the overall transportation system of the country. On most of the waterways, navigation is restricted to small shallow-draft native craft which can carry only a few passengers and a small amount of cargo. There are no significant river ports.

The Lago de Izabal waterway system is the most important in the country. It includes the navigable portion of the Río Polochic, Lago de Izabal, El Golfete, and the Río Dulce. During the high-water season, May through October, steamers drawing 8 feet can navigate about 55 miles from the minor port of Livingston up the Río Dulce to El Estor near the western end of Lago de Izabal. Barges and native craft can travel 35 miles farther -- up the Río Polochic to Panzós, railhead of the now inoperative Verapaz Railroad. The system provides a route for coffee and other products moving from east-central Guatemala to the Caribbean. A new nickel mining operation is underway in the vicinity of El Estor, and the waterway may take on added significance as a route for barge shipments of ores.

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Figure 62. Airfield at Chinaja, department of Alta Verapaz, in densely wooded area near border with El Petén. The 6,000-foot runway is gravel surfaced.



Figure 63. DC-3 at Tikal airfield in department of El Petén.

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The Río Sarstún, which forms the southern boundary of British Honduras, provides an important route of access to El Petén department in northern Guatemala. Flat-bottomed barges can navigate to the town of Modesto Méndez about 27 miles upstream from the mouth of the river. Modesto Méndez is connected by an all-weather road with Flores. The river is most important as a transportation link on the route from Puerto Barrios and Matías de Gálvez to the Military Zone Headquarters at Poptún and to other places in El Petén. Local villagers also use it when traveling to market in Livingston. The width of the river varies from about 2,500 feet at its mouth to about 75 feet at Modesto Méndez. A wide sandbar stretches across the mouth of the river at a depth of approximately 4 to 5 feet. Over this entrance way the water is very rough. The rest of the river is generally deep enough to present no problems, but submerged boulders and floating logs are hazards along the upper sections. Upstream from Modesto Méndez, the Río Sarstún is navigable by small native craft for perhaps another 20 miles.

The Río Motagua, although one of the longest rivers in Guatemala, supports very little boat traffic. The bar at the mouth of the river is one of the most treacherous on the coast and is impassable for even small craft whenever the usual on-shore wind is blowing. The depth of water over the bar is only 3 feet. Large, flat-bottomed craft ply the river to Gualan, 85 miles upstream from the mouth, but the shallow depths, numerous bends, and sunken trees present obstructions to navigation.

The only significant waterway on the Pacific coast is the Canal de Chiquimulilla, which links a number of long, narrow lagoons into a salt-water route extending about 45 miles to the east and 25 miles to the west of the port of San José. At San José, the canal lies 600 feet from the shore and is 30 feet wide and 5 feet deep. In many places it is bordered by dense growths of mangrove and other swamp vegetation abounding in poisonous plants and swarms of gnats (see Figure 64). The route is used mostly by local traders, small-produce growers, and fishermen. Tourists can travel through the canal by launch from the old Spanish port of Iztapa, now a bathing resort, located about 7 miles east of San José.

The Río Usumacinta system of northern Guatemala is a significant international waterway and the second most extensive waterway in Central America. It consists of the Río Usumacinta and its navigable tributaries -- the Río San Pedro,

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the Río de la Pasión, and the Río Salinas. The waterway is valuable mainly as a route for rafting timber out of El Petén, downstream through the Mexican states of Chiapas and Tabasco to the Gulf of Mexico. The Río San Pedro, northernmost tributary of the Río Usumacinta in Guatemala, flows northwestward from its source near Lago Petén Itzá for a distance of approximately 220 miles to its juncture with the Río Usumacinta in Mexico. It is navigable for about 110 miles downstream from the small town of El Progreso, 6 miles from the Mexican border. Large quantities of chicle and lumber are said to be transported on this stream. It has an average width of 130 feet and an average depth of 10 feet and is canalised below El Progreso. The Río de la Pasión, flowing northward from Alta Verapaz department into El Petén, is about 215 miles in length. It has an average width of 280 feet from Cancuén near the Alto Verapaz - El Petén border to its confluence with the Río Salinas at Nueva Esperanza. The mean depth is about 10 feet, and the river is navigable for about 150 miles. Sebol, near the northern terminus of National Route 5 in northern Alta Verapaz department, is at the headwaters for navigation by shallow-draft boats, including canoes carrying several tons of cargo. The Río Salinas (Río Chixoy or Río Negro) is navigable for 130 miles of its total length of 250 miles; it is 200 to 500 feet wide in El Petén.

Besides the lumber rafts, most navigation on the rivers of El Petén and adjacent departments of northern Guatemala is by native dugouts known as cayucos. Many of these are powered by outboard motors.

2. Seaports and Shipping

Guatemala has five seaports, three on the short Atlantic coast and two on the longer but less protected Pacific coast. Puerto Barrios and Matías de Gálvez on the Atlantic coast are principal ports; Livingston, also on the Atlantic coast, is a minor port. San José and Champerico, open roadsteads on the Pacific coast, are secondary ports.

Puerto Barrios, Guatemala's leading seaport, handles most of the country's maritime commerce (see Figure 65). It is located at the southeastern end of the Bahía de Amatique on the only protected deep-water harbor. The port has a pier with about 3,500 linear feet of wharfage and is equipped with special mechanical facilities for loading bananas. The estimated military port capacity of Puerto Barrios is about 3,000 long tons of general cargo per day. The port is connected with Guatemala City by the main line of the IRCA-GD railroad and by the paved Atlantic Highway. An airfield and a seaplane

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Figure 64. Canal de Chiquimulilla on Pacific coast. Note mangrove vegetation.



Figure 65. Harbor and dock facilities at Puerto Barrios on Caribbean coast. Bananas are being loaded mechanically.

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station (not in active use) are also located at Puerto Barrios.

Next in importance is Matías de Gálvez, formerly known as Santo Tomás (see Figure 66). It is located on the same deep-water harbor as Puerto Barrios but about 4 miles southwest of that port. Matías de Gálvez was constructed by the Guatemalan Government to reduce the country's reliance on the foreign-owned facilities at Puerto Barrios, and considerable traffic is expected to be diverted its way during the coming years. It has about 1,800 linear feet of wharfage. The current military port capacity is about 1,800 long tons of general cargo per day. As yet no rail spur has been constructed to the port, but a paved road gives access to the Atlantic Highway. A small Guatemalan Navy facility is located at the port.

San José, the country's largest Pacific port, is the closest seaport to the capital -- about 45 miles distant -- with which it has direct rail and road connections. The harbor lies on the open coast. The port has only one wharf (see Figure 67), a long pier jutting offshore, and two offshore pipeline berths. It serves mainly as a transshipment point for petroleum, which is distributed to the interior by railroad tank cars. Principal shipments from the port include coffee, hardwood, and agricultural products. The estimated military port capacity of San José is about 400 long tons of general cargo per day.

Champerico, about 70 miles northwest of San José, is also an open roadstead. Coffee is its principal export. The port has one pier, which is currently being extended. The military port capacity is estimated at 400 long tons of general cargo a day. An asphalt road leads north from Champerico to the coffee country on the slopes of the Sierra Madre, and a rail line connects the port with the main line of the IRCA-GD railroad.

Livingston, the minor port on the Atlantic coast, is located on a small bay at the mouth of the Río Dulce. It is primarily important as the ocean terminal of a bargeline operating on the Lago de Izabal - Río Dulce waterway. Before the railroad line was constructed to Puerto Barrios, Livingston was Guatemala's leading port, but it has deteriorated considerably since that time. It still exports some of the coffee from the department of Alta Verapaz. The port has about 200 feet of principal wharfage, suitable only for small lighters and river craft. There is no road or rail clearance from the town. A small airfield has been constructed at Livingston for emergency transportation and to offer sportsmen a means of access to an area of excellent hunting and fishing.

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Figure 66. Port of Matías de Gálvez near Puerto Barrios.



Figure 67. Loading dock and lighter barges at port of San José on Pacific coast.

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Guatemala's merchant marine consists of only two dry-cargo ships totaling 3,629 gross register tons. These ships carry a very small portion of the country's foreign trade, most of which is handled by vessels of the United States, West Germany, Honduras, Norway, Sweden, Liberia, and the Netherlands. Coastal traffic in Guatemala is insignificant.

F. Cross-Border Movement

1. General

Guatemala shares borders with Mexico, British Honduras, Honduras, and El Salvador. If the minor bends and meanders of the river boundaries are ignored, the international boundaries of Guatemala total about 965 miles in length; for the most part they pass through sparsely inhabited jungles where transportation facilities are primitive or nonexistent. Various forms of smuggling and other illegal traffic across these borders have been widespread. Many of the arms used by the current insurgent forces in Guatemala have entered the country by way of Mexico, while the frontier areas of Honduras and El Salvador have served as havens for these groups.

2. Movement across Mexican Border

Guatemala's longest international boundary -- 540 miles -- is with her largest neighbor, Mexico. The best transportation facilities between the two countries are concentrated in the Guatemalan departments of San Marcos and Huehuetenango bordering on the Mexican state of Chiapas. The Pacific Highway, along the coast, crosses the border at Talisman and extends to Tapachula, Chiapas. The Inter-American Highway, high in the mountains farther inland, crosses the border near La Mesilla and extends to Comitán, Chiapas, via the Mexican border town of Cuauhtemoc. The only rail connection with Mexico is made in San Marcos department on the coastal plain where the main line of the IRCA-GD railroad runs to Ciudad Tecún Umán. In Ciudad Tecún Umán there are facilities for transloading from the 3'00" narrow-gauge Guatemalan line to the 4'8-1/2" standard-gauge line that continues northwestward into Mexico. The border is open during daylight only, and international traffic is light. The most important airfield in the southern frontier zone is at Tapachula, Chiapas. It is an international airport in regular use by commercial airlines. Numerous smaller airstrips are situated in the coastal lowland on both sides of the border.

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The only significant waterways between Guatemala and Mexico are the Río Usumacinta and its tributaries, the Río Salinas and Río San Pedro flowing out of El Petén department. Traffic on these rivers is very light and consists almost exclusively of rafted timber, dugout canoes, and small launches. Scientists and occasionally tourists are attracted to the frontier zone along the Río Usumacinta by numerous Mayan archeological sites. Most notable of these are Piedras Negras, on the Guatemalan side of the river, and Yaxchilan and Bonampak, on the Mexican side. Yaxchilan is situated in a great loop of the river between Salvamento and Tres Mariás; Bonampak, famous for its murals, is about 15 miles to the southwest, near Champa Esteban. Bonampak can be reached in 3 days by mule from a chicle camp on the river at Agua Azul, Mexico, where a small landing strip is located.

Other small airfields in the border zone between El Petén and Chiapas are at Lacandón, El Repasto (La Pita airfield), and San Fernando, on the Guatemalan side, and at Gracias a Dios, near the Río San Pedro on the Mexican side.

There are no road or railroad connections between the entire vast department of El Petén and the bordering Mexican states of Chiapas and Campeche. Paxbán, about midway on the long east-west boundary separating El Petén department from Campeche state, is connected by trail to Carmelita and other settlements in El Petén and by trail or unimproved dirt road leading northward across the border to the small Mexican settlement of San Felipe. From San Felipe a trail or dirt road continues northward to intersect Mexican Route 186 running between Francisco Escarcega and Chetumal. A small airfield, possibly abandoned, is located at San Felipe. Two other small airfields -- Villa Hermosa Campeche and Altamira -- hewed out of thick jungle, are located near the border in Campeche. On the Guatemalan side, airfields are located at Dos Lagunas, about 8 miles from the border, and at Carmelita, about 25 miles from the border.

3. Movement across British Honduras Border

The border between Guatemala and British Honduras is about 165 miles long. It passes through densely forested country, mostly low and undulating in the north but hilly to mountainous in parts of the south. The only road connection between the two countries is at Melchor de Mencos in El Petén department (see Figure 68). The Flores - Melchor de Mencos road connects with the Western Highway in British

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Honduras, which extends from Benque Viejo, on the border, to Cayo and Belice. The Western Highway is an all-weather road, macadam surfaced from Benque Viejo to Cayo and asphalt surfaced from Cayo to Belice.

Trails cross the border at a number of points. Probably the most important is that from San Luis, Guatemala, to San Antonio Nuevo, British Honduras. The trail is steep, muddy, and stony but mostly wide and clear of vegetation, at least on the British Honduras side. In 1961, it was deemed "jeep-able," although no one is known to have performed the feat. Indians on foot reach the border in about 6 hours from San Antonio Nuevo.

The Río Hondo and the Río Belice, together with their tributaries in Guatemala, are used to raft timber from El Petén into British Honduras. Other than this, there is little traffic between the countries via waterways.

Small airstrips at Melchor de Mencos (see Figure 69) and at the Mayan archeological site of Yaloch, about 20 miles to the north, are the closest air facilities to British Honduras in El Petén department. On the British Honduras side, Gallon Jug and Augustine are small airfields near the border. Other airstrips, possibly abandoned, are located near La Boca on the Río Hondo (Blue Creek airfield), near Cayo (Cayo and Norport airfields), and near Dolores in the extreme south (Dolores and Crique Sarco airfields).

4. Movement across Honduran Border

For the greater part of its 150-mile length, the Guatemala - Honduras boundary stretches over hilly or mountainous country; a small segment in the extreme northeast passes through low, swampy terrain. Movement across the border is very light, and there are no paved highway, rail, or navigable waterway connections between the two countries. Only two roads cross the border. Both are dry-weather roads running from Chiquimula department; the first goes to Copán, Honduras, and the other to Nueva Ocotepeque, Honduras. The road to Copán is an extension of National Route 21, an all-weather road from the departmental capital of Chiquimula. From Copán an all-weather Honduran road extends northeastward to join Honduran Route 18 leading to San Pedro Sula. The road that crosses the border to Nueva Ocotepeque (see Figure 70) runs from Esquipulas, which is connected with the departmental capital of Chiquimula by an all-weather road. Nueva Ocotepeque also is located on Honduras Route 18, near the border with El Salvador. Small airfields within less than 15 miles of the border on the Guatemalan side

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Figure 68. Melchor de Mencos, department of El Petén. The barbed wire fence marks the boundary with British Honduras.

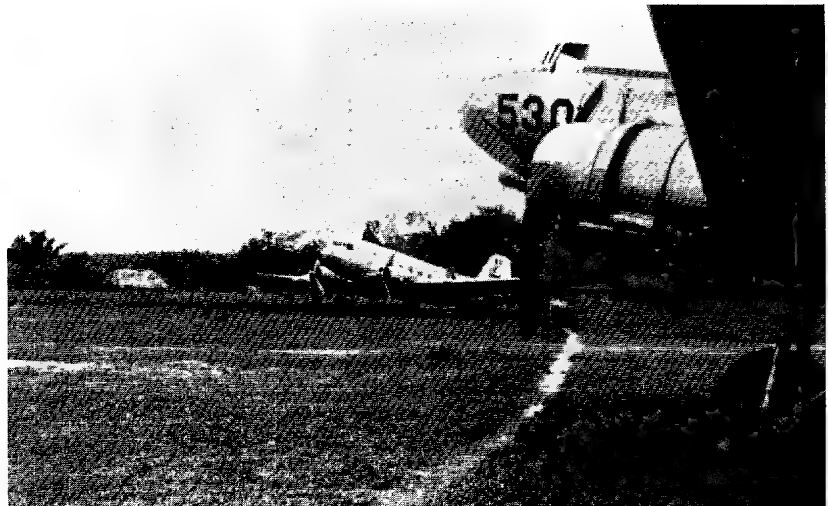


Figure 69. DC-3's, including AVIATECA plane, at Melchor de Mencos airfield near British Honduras border in department of El Petén.

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Figure 70. Customs post on Honduran border at Agua Caliente, department of Chiquimula.

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are located at Bananera, Yuma (El Pilar airfield), and Esquipulas. On the Honduran side the only airfield close to the border is Copán-Ruinas, near the well known Mayan archeological site of Copán. This small airfield is often used by tourists visiting the ruins.

5. Movement across El Salvador Border

The Guatemala - El Salvador border is about 110 miles long; it passes through high, mountainous country in the northeast, tablelands and hills in the central section, and a narrow coastal lowland in the southwest.

Principal roads connecting the two countries are the Inter-American Highway and the Pacific Highway. Both are bituminous-treated roads in good condition, but traffic over them is relatively light. The Inter-American Highway crosses the border at San Cristóbal Frontera and continues into El Salvador to Santa Ana and San Salvador. The Pacific Highway crosses the border near the coast; in El Salvador it becomes El Salvador Route 2, known as the Littoral Highway. The Littoral Highway intersects El Salvador Route 12, a paved road leading to Sonsonate.

Only two other road connections are made across the border. National Route 23 from Jutiapa, mostly all-weather surfaced, meets a dry-weather road at the border leading to Chalchuapa, El Salvador. CA-8, branching off the Inter-American Highway about 5 miles east of Cuilapa, crosses the border near Valle Nuevo and extends across a treeless plain to Ahuachapán, El Salvador; it has an all-weather surface in El Salvador, but long segments in Guatemala are only dry-weather surfaced.

One rail connection is made between Guatemala and El Salvador. A narrow-gauge line of the IRCA extends across the border north of Lago de Güija. It is important to El Salvador as a means of transporting coffee to the Atlantic coast for shipment from Puerto Barrios.

No significant waterways connect the two countries. The Río Paz and other streams along the border are mostly unnavigable and act more as barriers to movement than as transportation routes. Lago de Güija, straddling part of the northern section of the boundary, is notable mainly as an attraction for hunters and fishermen. However, it might serve as a route for clandestine border crossings. An all-weather road, El Salvador Route 12, skirts the eastern end of the lake on its way to Metapán from Santa Ana, and numerous tracks and trails lead from the western end of

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the lake in Guatemalan territory to Asunción Mita on the Inter-American Highway.

A small airfield, possibly abandoned, is located on the northern shore of Lago de Güija in El Salvador. The only other airfields fairly close to the border are the small, natural-surfaced strips at Jutiapa, Guatemala, and at Santa Ana, El Salvador.

G. Targets

The destruction of key transportation targets would seriously affect the national economy of Guatemala. Principal rail and highway routes from the capital city to the main ports parallel one another and are vulnerable to interdiction by the demolition of bridges and tunnels. Access to remote parts of the country, such as El Petén department, could be denied temporarily by the destruction of bridges on the few roads leading to these areas and by the capture and obstruction of their airfields.

The main line of the IRCA-GD railroad has 154 bridges and three tunnels between Puerto Barrios and Guatemala City. Among the larger structures that could be destroyed by guerrilla-type forces along this important route are the following:

<u>Type of Structure</u>	<u>Location</u>	<u>Remarks</u>
Tunnel	15°42'20"N 88°32'22"W, 5 miles SE of Puerto Barrios	785 feet long; concrete tunnel with oval cross section
Bridge	15°14'25"N 89°07'00"W, over Río Motagua, 2 miles SW of Los Amates	592 feet long; three through truss spans and one steel plate girder span; built in 1925
Bridge	14°44'24"N 90°19'50"W, over Río Agua Caliente, 15 miles NE of Guatemala City	479 feet long; seven deck truss spans

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<u>Type of Structure</u>	<u>Location</u>	<u>Remarks</u>
Bridge	14°44'07"N 90°22'48"W, over Río Tecolate, 12 miles NE of Guatemala City	570 feet long; 11 steel deck truss spans

On the Atlantic Highway, CA-9, between Puerto Barrios and Guatemala City are 62 bridges, many of which would be very difficult to bypass, including the following potential targets:

<u>Location</u>	<u>Remarks</u>
15°34'35"N 88°37'50"W, over Río Tenedores, 11 miles SW of Puerto Barrios	154 feet long; four reinforced concrete spans
14°51'15"N 90°05'51"W, over Río Guastatoya, near El Progreso	285 feet long; steel
14°47'38"N 90°15'25"W, over Río Plátanos, near Sanarate	245 by 25 feet; concrete
14°44'15"N 90°19'55"W, over Río Agua Caliente, 16 miles NE of Guatemala City	500 by 25 feet; five reinforced concrete deck- type spans

By capturing and rendering unserviceable the runways of the following small airfields in remote El Petén department, a large section of northern Guatemala could be isolated temporarily:

<u>Name of Airfield</u>	<u>Location</u>	<u>Remarks</u>
Carmelita	17°30'N 90°10'W, 37 miles NW of Flores	3,700-foot gravel runway
Dos Lagunas	17°41'N 89°32'W, 58 miles NE of Flores	5,905-foot gravel runway

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<u>Name of Airfield</u>	<u>Location</u>	<u>Remarks</u>
Paso Caballos	17°15'04"N 90°15'18"W, 33 miles NW of Flores	2,600-foot gravel run- way
Uaxactún	17°23'48"N 89°38'11"W, 37 miles NE of Flores	3,280-foot gravel run- way

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7. Whetten, Nathan L., Guatemala -- The Land and the People, New Haven: Yale University Press, 1961. U.

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GUATEMALA: Airfields and Seaplane Stations

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VIII. Telecommunications

A. General

With the exception of broadcasting, telecommunications facilities in Guatemala are government-owned, and are operated by the Director General of Posts and Telecommunications (Dirección General de Correos y Telecomunicaciones). Broadcasting facilities are almost entirely privately owned and operated. Guatemala's inter-urban transmission base consists of open wirelines and high-frequency (HF) point-to-point radio. The open wireline network furnishes quite extensive telegraph coverage and more limited telephone coverage of the country. HF point-to-point radio provides additional telephone and telegraph connections between many of the larger towns and Guatemala City.

For international communications, Guatemala depends primarily on HF point-to-point radio links. These are supplemented by some low-capacity open wirelines which carry telephone and telegraph traffic between Guatemala and neighboring countries. Radio and television broadcasting stations are concentrated in Guatemala City, as are most other telecommunications facilities. Guatemala's telecommunications system is generally inadequate to meet its needs, due to antiquated equipment and poor maintenance practices.

B. Telephone and Telegraph

1. Domestic

Guatemala's domestic telephone and telegraph system consists of open wirelines and HF point-to-point radio (see Map 56146). The open wirelines provide widespread telephone and telegraph connections throughout Guatemala. As shown on the map, the telegraph wireline network is the most extensive system and provides service to most of the larger urban and rural communities. The telephone wirelines are concentrated, for the most part, in the populous southern part of the country and link the larger towns. In some areas the wirelines can be used to transmit either telegraph or telephone messages.

Although widespread, Guatemala's open wirelines are generally rather old (some sections being over 50 years old) and of low capacity (usually single channel). However, some portions of the system have carrier equipment, which gives them multichannel capacities. These lines extend from Guatemala City to: Zacapa (2 channels), Chiquimula (3 channels),

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and Escuintla (3 channels).

Supplementing and extending the open wireline network is an HF point-to-point radio network. This network furnishes telephone and telegraph connections from Guatemala City to the larger towns of the country. In some instances HF point-to-point radio provides the only means of communications between remote areas -- especially those in Petén -- and the rest of Guatemala.

At the beginning of 1966, Guatemala had a total of about 25,000 telephones, most of which (almost 22,000) were in Guatemala City. The majority of Guatemala's telephone exchanges are manual. However, there are several automatic exchanges in the country: six in Guatemala City, and one each in Amatitlán and Antigua Guatemala. In late 1965 three additional automatic exchanges were under construction in Guatemala City, and one each in San Juan Sacatepéquez, Mixco (14°38'N - 90°36'W), and Villa Nueva (14°31'N - 90°35'W). Figure 71 shows one of the Guatemala City exchanges. Guatemala's telegraph transmission facilities are manually operated and generally quite old.

2. International

International telephone and telegraph connections are available from Guatemala via HF point-to-point radio and open wirelines.* The principal means of international telephone and telegraph communications from Guatemala is via HF point-to-point radio. These circuits extend from Guatemala City, Puerto Barrios, San José (13°55'N - 90°49'W), and Pueblo Nuevo Tiquisate to surrounding countries in Central America and the Caribbean, as well as to the United States. Low-capacity wirelines also provide telephone and telegraph connections to the neighboring countries of Mexico, El Salvador, and Honduras. Telegraph wirelines run from Ciudad Tecún Umán to Mexico; from Valle Nuevo (14°02'N - 89°55'W) and Esquipulas (14°34'N - 89°21'W) to El Salvador; and from El Florido (14°51'N - 89°14'W) to Honduras. From Valle Nuevo and Ciudad Tecún Umán telephone wirelines also link Guatemala to El Salvador and Mexico.

* Until August 1965, a single channel submarine cable operated by All America Cables and Radio, provided telegraph circuits from San José, Guatemala (13°55'N - 90°49'W) to La Libertad, El Salvador, and San Juan del Sur, Nicaragua. It is now out of operation, but still intact.

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C. Broadcasting

Guatemala has more than 90 AM radiobroadcasting stations and four television stations (see Map 56146). All of the television stations and a majority of the radio stations are located in Guatemala City. Unlike other telecommunications facilities, broadcasting is mostly privately owned and operated. Currently, Guatemala has no well-developed radio or television networks, although the government operates "Radio Nacional" stations in Guatemala City, Quezaltenango, Mazatenango, Flores (16°56'N - 89°53'W), San Marcos (14°57'N - 91°48'W), Matías de Gálvez, and Totonicapán. At the beginning of 1966, Guatemala had an estimated 280,000 radio receivers and approximately 50,000 television receivers.

D. Specialized Networks

Guatemala has several specialized communications systems. These networks are used for aeronautical, police, and military functions. AVIATECA, the national airline, operates an HF point-to-point radio network from Guatemala City to sixteen cities throughout the country. Another specialized HF point-to-point radio network is operated by the National Bank of Guatemala to connect its main bank in Guatemala City with branches throughout the country. The National Police has two HF point-to-point radio networks whose control centers are in Guatemala City. The Border Police also has an extensive HF point-to-point radio network which links Guatemala City with many key towns near the nation's borders. Military communications requirements are handled by the Communications Services of Guatemala network. Like the other specialized systems, the Communications Services of Guatemala network is an HF point-to-point radio network centered in Guatemala City. In addition, it has secondary centers in Quezaltenango, Puerto Barrios, and Zacapa.

E. Prime Targets

The principal telecommunications facilities of Guatemala are located in the Guatemala City area. Most of the country's telephone exchanges and more than 85 percent of its telephones are in Guatemala City. Also, the open wireline system radiates from there to the rest of the country. HF radio transmitting and receiving facilities, both domestic and international, are overwhelmingly concentrated in the Guatemala City area. Here, too, are located the central facilities of the specialized HF point-to-point radio networks, as well as the majority of Guatemala's radio and television broadcasting facilities.

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Outside of Guatemala City, the multiplicity of open wireline interconnections and the availability of HF point-to-point radio in many towns would prevent effective disruption of telecommunications except on a localized basis. Removal of the National Police HF radio station at San Lucas Sacatepéquez would seriously disrupt the National Police network, since this station is used to relay messages from Guatemala City to about 75 percent of the other stations in the network. On the international side, HF point-to-point facilities at Puerto Barrios, San José, and Pueblo Nuevo Tiquisate could provide limited communications to other countries in the event the facilities in Guatemala City were destroyed or otherwise neutralized.

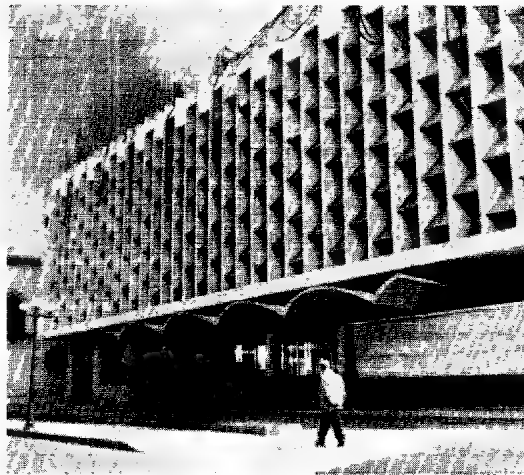


Figure 71. Telephone and telegraph building in Guatemala City. It houses an automatic exchange.

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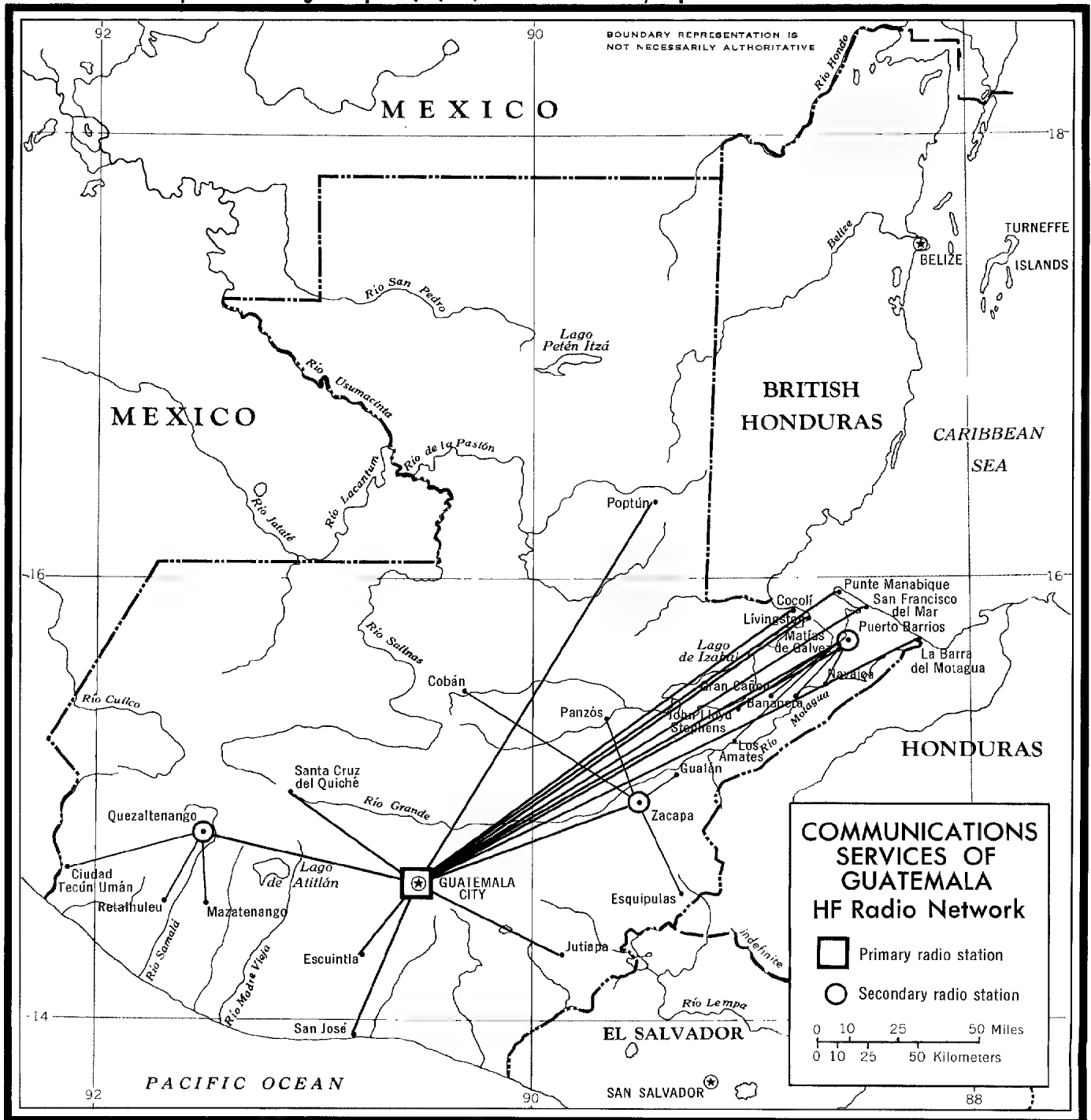
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2. CIA, FBIS. Broadcasting Stations of the World, pt I and pt IV, Jun 1966. U.
3. CIA. NIS 71, Guatemala, sec 38, "Telecommunications," Sep 1958. C/NFD.
4. US Foreign Operations Administration. Telecommunications Survey of Guatemala, Mar 1955. U.
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GUATEMALA: Specialized High-frequency (HF) Radio Networks, April 1967

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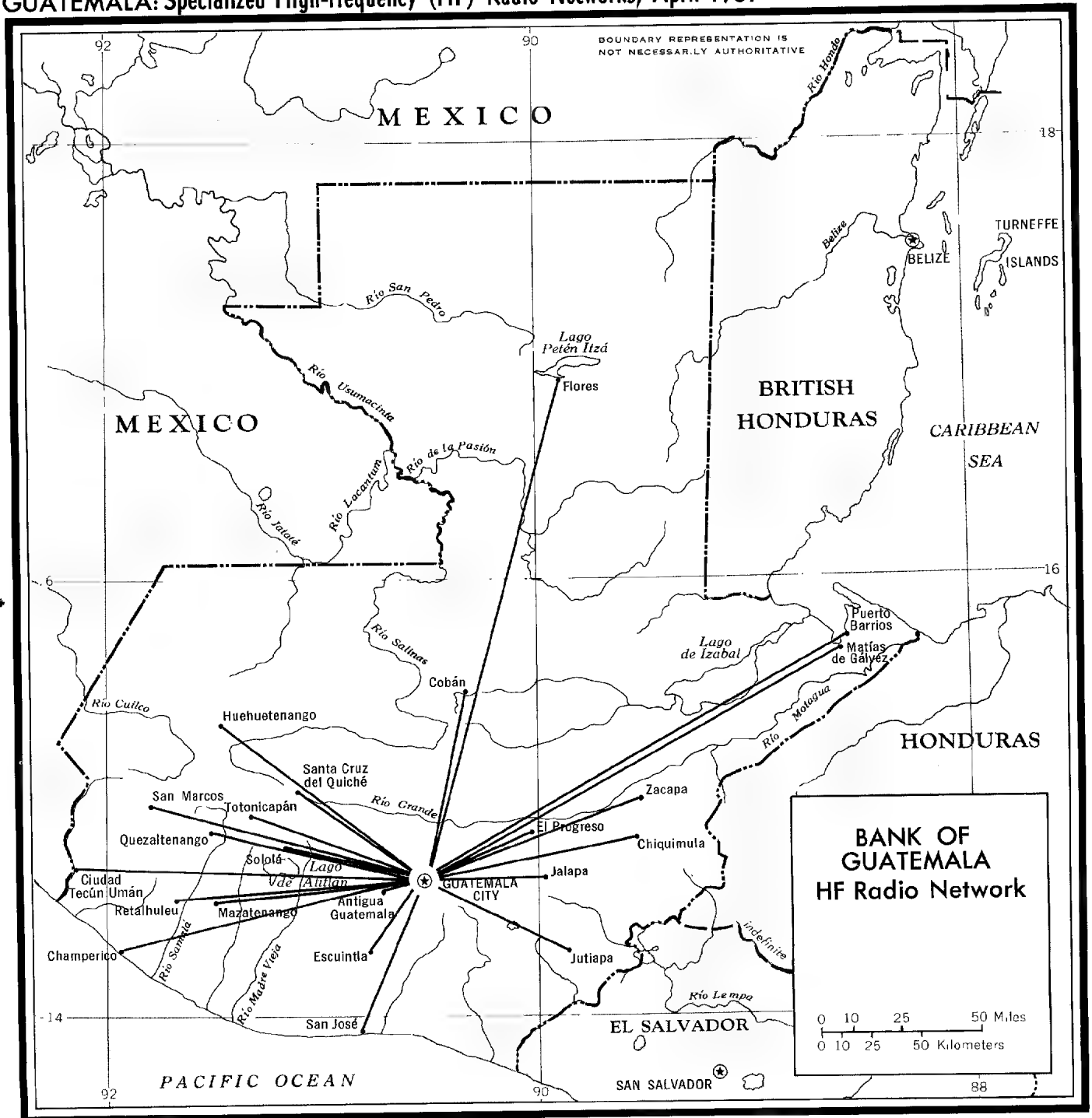
GUATEMALA: Specialized High-frequency (HF) Radio Networks, April 1967

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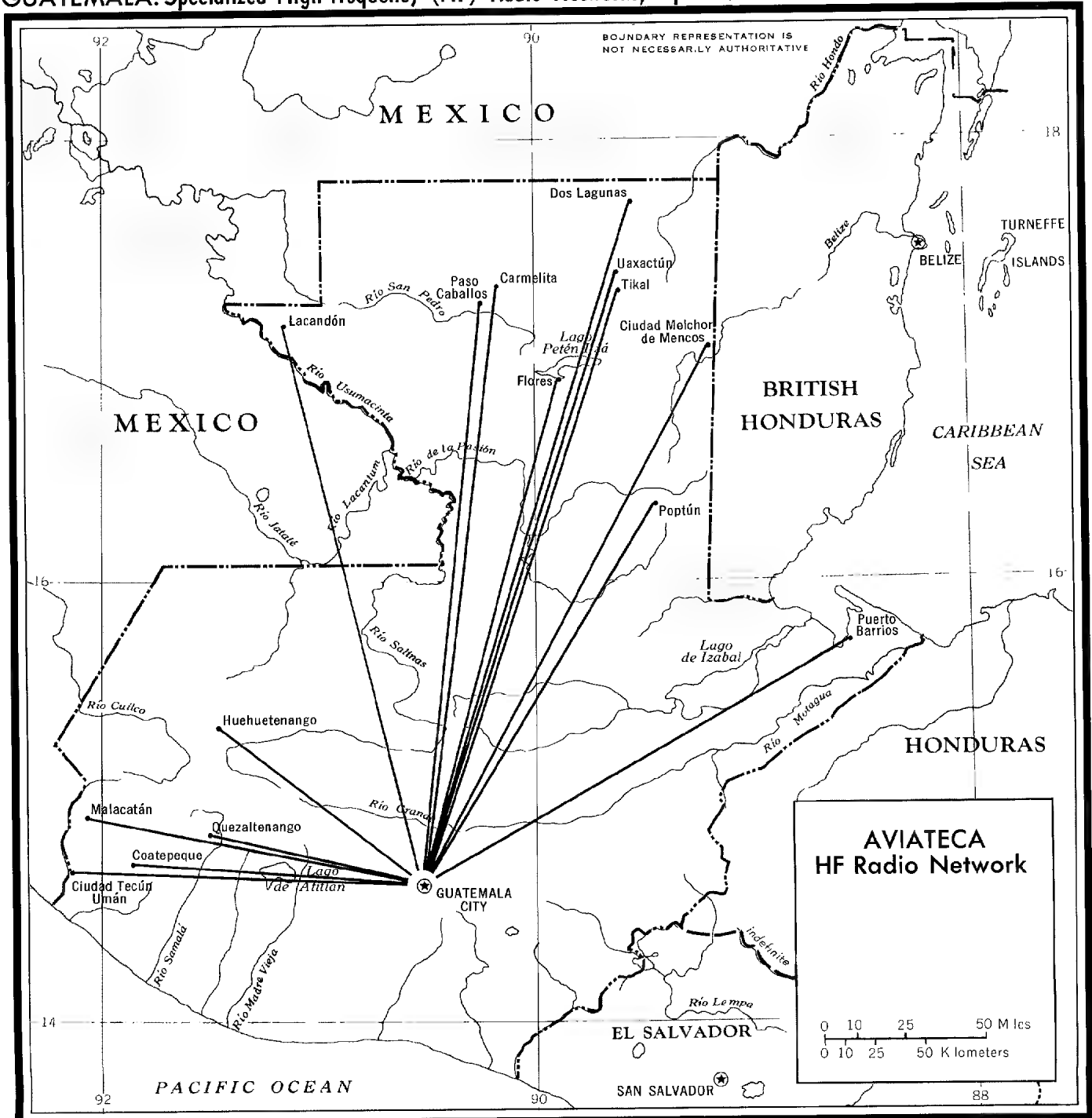


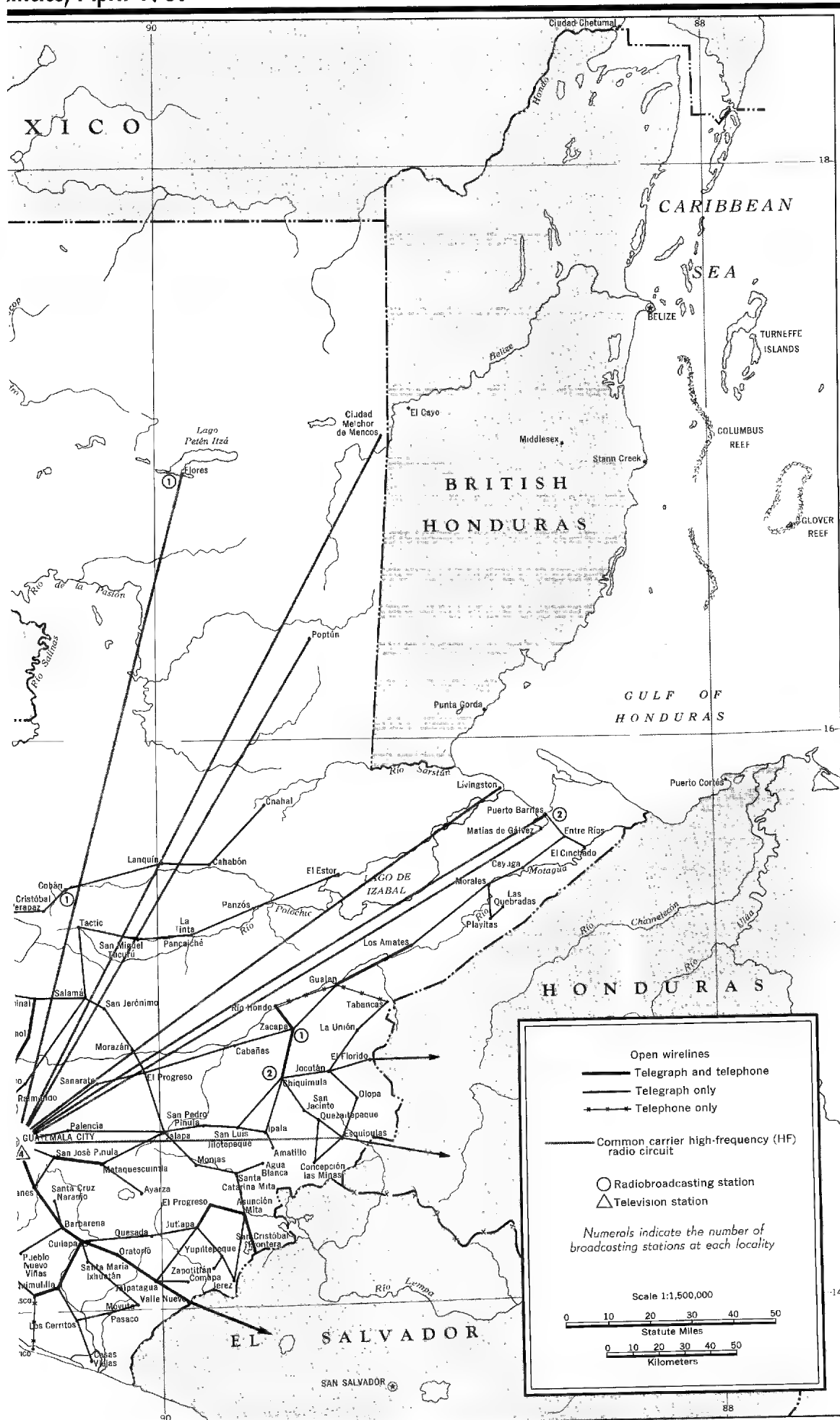
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GUATEMALA: Specialized High-frequency (HF) Radio Networks, April 1967

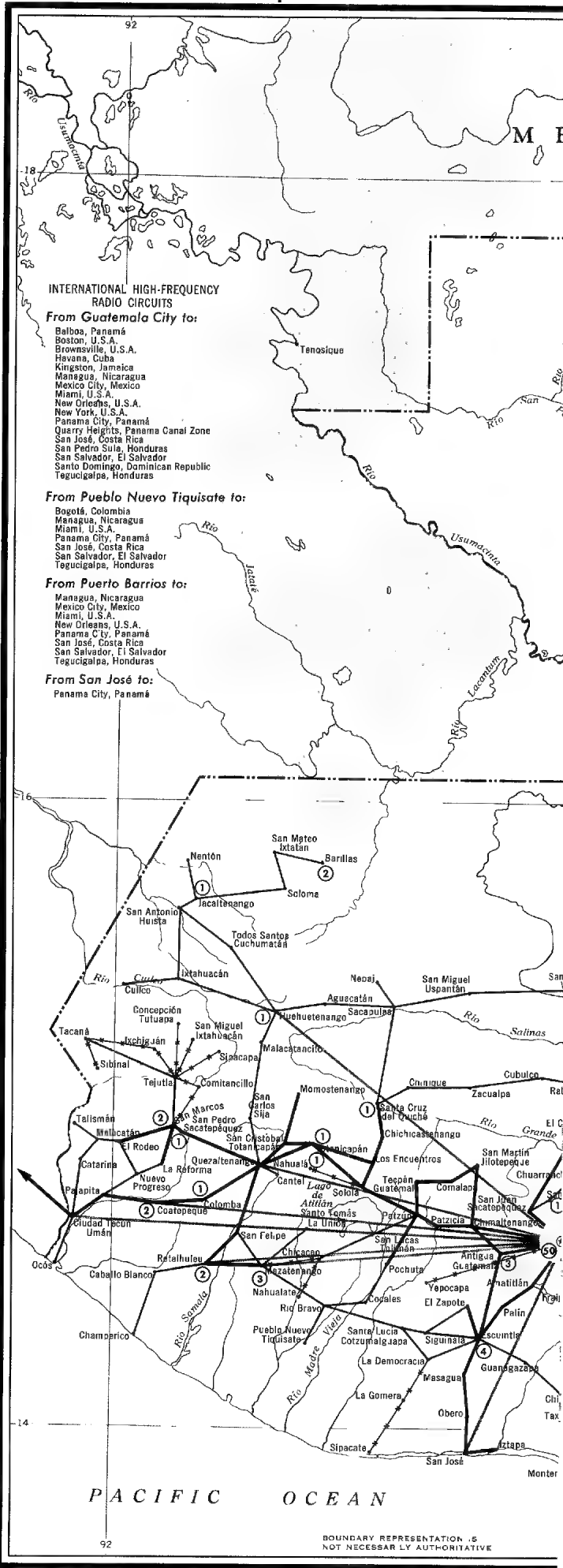


GUATEMALA: Specialized High-frequency (HF) Radio Networks, April 1967





GUATEMALA: Principal Telecommunication Facilities



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IX. Military and Internal Security Forces

A. General

The Guatemalan Army, which is designed to maintain internal security, is an integrated force consisting of ground, naval, and air elements. The three principal national police organizations, totaling about 5,000 men, contribute to the internal security of the republic and can be called upon for national service as needed. There are no paramilitary forces.

The Guatemalan armed forces total about 9,750 men. They are capable of controlling riots and limited guerrilla activity, and they could defend Guatemala against aggression by any neighboring country except Mexico. They would not be capable of extensive and prolonged campaigns against well-organized guerrilla activity, although counterinsurgency capabilities have been considerably increased by US aid. The armed forces could not maintain sustained offensive operations against neighboring countries. Guatemala could contribute personnel to general hemisphere forces, but little, if any, equipment. The limited resources available to the armed forces are barely sufficient for the maintenance of internal security.

The army is the most important organized group in Guatemalan politics, and the officer corps has a strong political orientation. Enlisted personnel do not share this interest and traditionally play no leadership role in politics. The public attitude toward the armed forces has been hostile, largely because of interference in politics and the lack of professional competence. The reputation of the armed forces recently has been improved through civic action programs, sometimes conducted with US assistance, and through their recent successes against the guerrillas.

The primary loyalty of the officers is to the military and to the military's self-ordained moral guardianship of the constitution. Officers and enlisted men are bound by a personal loyalty to their commanders which blurs their loyalty to the government. When the executive behavior is considered to be unconstitutional, corrupt, or inept, or when the armed forces see their status threatened, they regard active plotting and interference as part of their legitimate and necessary mission.

Communist influence is insignificant in the armed forces, and most of the officer corps is strongly anti-Communist. There is, however, some subversive penetration, as evidenced by the insurgents' frequent foreknowledge of government counterinsurgency plans.

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Guatemala is a member of the Inter-American Defense Board of the Organization of American States and a member, with Honduras and Nicaragua, of the Central American Defense Council, which held its first meeting in June 1964. The council proposes to unify Central American military systems and to coordinate civic action programs.

The armed forces are hampered by insufficient funds, a high rate of illiteracy among inductees, a constant turnover of conscripts, a lack of a professional noncommissioned officer corps, and an absence of effective leadership. Maintenance of internal security by the armed forces is complicated by difficult terrain, barely adequate military transportation and communication systems, and unstable political conditions.

The US Military Assistance Program (MAP) has assisted in equipping and maintaining four infantry battalions since 1955. Emphasis has been placed on supplying weapons and improving the communications, maintenance, mobility, tactics, and doctrine. The current aims of the MAP program are to increase the capability of the Guatemalan Armed Forces to maintain internal security and conduct civic action, to provide better command and control during counter guerrilla operations, and to increase surveillance over coastal areas.

Through the MAP civic action program Guatemalan troops have constructed and repaired roads and bridges in remote areas; dug wells in villages; built dispensaries and hospitals; and provided tools, labor, and technical advice for sanitary projects. Literacy training centers have been built and staffed, and an air-mobile medical team now provides medical assistance to remote areas.

B. Ground Forces

The principal mission of the ground forces is to provide internal security. They have proved capable of handling riots and small-scale guerrilla activity. The strength of the ground forces is approximately 9,100, not including 700 cadets and 2,200 ex-servicemen who are under army contract as cooks, drivers, clerks, etc. Of a total corps of approximately 935 officers, a large proportion are colonels and other field-grade officers. Company-grade officers comprise about 30 percent of the total.

Headquarters of the ground forces is at Guatemala City. Although they are nominally controlled by the Chief of the Army General Staff, the Minister of National Defense, who

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traditionally is a ground forces officer, exercises at least equal direct authority. The ground forces are controlled through eight major commands: six military zones (with headquarters at Guatemala City, Poptún, Zacapa, Jutiapa, Quezaltenango, and Santa Cruz del Quiché), and the Puerto Barrios and San José Military Bases.

The brigade is the highest tactical echelon. The brigades, as well as their constituent battalions, have four-section staffs that function in theory along the lines of those of the US Army. Guatemalan ground forces staff work, however, is generally poorly organized and executed.

Branches of the ground forces include infantry, artillery, cavalry, engineering, and general staff. The ground forces are tactically organized into four infantry brigades, four separate battalions (three infantry and one engineer), one airborne rifle company, and the Presidential Guard. Two of the infantry brigades are in Guatemala City; one is in Zacapa, and one is in Quezaltenango. The separate infantry battalions are in Jutiapa, Santa Cruz del Quiché, and the Puerto Barrios Military Base. The separate engineer battalion is in Poptún. The airborne rifle company and miscellaneous troops, equal in number to approximately two additional companies, are located at the San José Military Base. The infantry brigades, equal in size to a US infantry battalion, together with the 420-man Presidential Guard and troops assigned to the military zone bring the disposition of troops in the Guatemala City area to about 3,000, or almost one-third the total ground forces strength. Miscellaneous troops numbering more than 2,000 are detailed as guards around key buildings and airports; used in detachments in towns, seaports, and civic action projects; and serve as logistical personnel, military hospital personnel, and musicians.

The strengths of the ground forces lie in the physical endurance of the enlisted men and the willingness of the officers corps in general to change organization, training, and equipment in line with the real needs of the country, especially in the direction of improved counterinsurgency capability. The preoccupation of officers with political affairs, however, interferes with their professional development. On the whole, training, training aids, and training areas are inadequate. Most of the enlisted men are illiterate at induction, and although they are amenable to discipline, they tend to lack initiative. Ground forces programs are handicapped by the constant turnover of conscript personnel and by the lack of a professional noncommissioned officer corps. Morale is moderately good, but fluctuates, often

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depending on the success of anti-guerrilla operations. Because much of the equipment -- including arms -- is antiquated and of miscellaneous types, maintenance and resupply problems are frequently encountered.

C. Naval Forces

The navy, established in 1959, is essentially a small coast guard force. It is organizationally under the Army General Staff but in practice is under the operational control of the Minister of National Defense. Its primary mission is to contribute to the maintenance of internal security by protecting ports, port facilities, rivers, and coastal waters and by preventing the clandestine movement of men, equipment, arms, and propaganda material into the mainland of Guatemala from the sea. The navy is responsible for the security of the naval base at Matías de Gálvez and could furnish some assistance to local security forces.

The Guatemalan navy consists of 315 men (30 officers, 200 enlisted navy men, and 85 enlisted naval infantrymen), one patrol escort ship, four patrol craft (two 28-foot utility boats and two 40-foot utility boats), three auxiliary craft, and one amphibious warfare craft.

The navy is limited by its lack of experienced personnel; by the age, condition, and difficulty of providing spare parts for its patrol escort ship (Swedish, completed in 1936); and by an inadequate training program and limited training facilities. A US naval adviser, stationed at Matías de Gálvez since 1961, has been instrumental in the considerable improvement which has been made in the training system.

The 28-foot utility boats, obtained through AID, assist in river and harbor patrol; and the 40-foot US Coast Guard utility boats, provided through naval MAP support initiated in FY 1962, have improved the coastal patrol capability of the navy. Patrol capabilities remain limited, however, because of the small size of the craft and the lack of radar and adequate communications equipment. The navy is totally dependent on foreign sources of supply for ships, spare parts, petroleum, and almost all manufactured goods. Guatemala has no domestic capability to supply naval craft, ordnance, or equipment. No war reserves are maintained.

The navy has a small base at Matías de Gálvez, with facilities barely adequate to meet the peacetime needs of the small fleet. Only emergency repairs can be accomplished on the patrol escort ship; normally it is sent abroad for

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extensive repairs or overhaul. A US floating workshop, leased to Guatemala in 1962, has increased the naval repair facilities. Although the only two ships in excellent condition are the 40-foot utility boats, the remaining units are in good repair. Guatemala has no reserve of naval personnel or ships.

D. Air Force

The missions of the Guatemalan air force are to assist the ground forces in defense of the country, to aid in maintaining internal security, and to transport troops and supplies to posts difficult to reach by surface transportation. It is organized into a composite unit with a personnel strength of 330 (74 officers; 256 enlisted men) and has 37 aircraft (7 jets; 27 prop; 3 helicopters), all of US manufacture. The tactical forces consist of day fighters (T-33's and F-51's), light bombers (B-26's), transports (C-54's, C-47's and Cessna 180's), and helicopters (H-19B's). The air force is organizationally a part of the army, but the Chief of the Air Force retains operational control and often violates chain of command procedures by reporting directly to the Minister of National Defense.

Although it is the best air force in Central America, it could not cope with an offensive attack by the air force of a major Latin American country because of its small size and obsolete equipment. The air force does have limited tactical air capability for support of ground operations requiring bombing, strafing, and visual reconnaissance, but this could not be maintained for more than five or six days.

The air force has no strategic air capability, and no early-warning or intercept capability or overall air defense intercept role. The airlift capabilities are adequate for peace-time needs; but, during an emergency, they would have to be supplemented by the 10 civil aircraft (3 Douglas DC-3's; 1 Douglas DC-4; 4 Douglas DC-6B's; 2 Curtiss C-46's). The air force is capable of performing limited daylight maritime reconnaissance.

Guatemala is completely dependent on outside sources for aircraft and spare parts, armament and ammunition, and aviation fuel. All of its aircraft and spare parts are obtained from the United States. There are no significant reserves of munitions or armaments.

All air force enlisted men are volunteers, mostly Indians. The officers are recruited from the Polytechnic Institute, the Guatemalan military academy. There is no

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organized air force reserve.

The training program of the air force is adequate to meet current requirements. Air indoctrination, proficiency, and upgrading flights are conducted from La Aurora Airport in Guatemala City. Student pilots are trained in the United States, where they receive their wings; they return to Guatemala in the status of a cadet and are subsequently commissioned as pilots in the GAF. Most of the training for ground officers, airmen, and key specialists is provided at Albrook Air Force Base, Canal Zone. Selected officers attend the Squadron Officer School and the Air Command and Staff School at Maxwell Air Force Base. The value of training received by recent US Air Force school graduates has been borne out by a general raising of proficiency levels. Present plans call for an increase in the number of jet-qualified pilots.

Guatemala's existing air facilities are adequate to support normal peacetime requirements of the air force. La Aurora, the principal airbase, is the only airbase in Central America capable of sustaining jet operations under maximum load conditions. La Aurora, an international airport, has all supporting facilities for VFR (visual flight rules) jet and propeller aircraft operations, but only limited facilities for all-weather operations.

E. Police and Intelligence Services

1. General

Guatemala's three principal police agencies -- the National Police, the Border Police, and the Judicial Police -- come under the Ministry of National Defense during national emergencies. In March 1967, the National and Judicial Police were placed under the control of the Ministry of Government, and legislation is now being considered to include the Border Police under the same ministry. The Border Police is now under the Ministry of the Treasury.

In addition to the three major police organizations, there are three other minor agencies. The Customs Police is under the Ministry of Government and has 120 men; the Immigration Police is also under the Ministry of Government and has about 25 men; and the Forestry Police is under the Ministry of National Defense and has about 140 men.

The police organizations generally lack strong, competent, and dynamic leadership. There are no executives technically qualified in police administration to guide

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and manage these organizations. Other weaknesses include poor logistic support, overdispersed unit deployment, a disproportionately large number of colonels and lieutenant colonels, poor maintenance practices, poor transportation and communications, and a preponderance of obsolete weapons of various calibers. These forces can be counted on only to a limited degree in riot control and counterinsurgency maneuvers, and cannot be considered a source of power in politics, for instance, to oppose the armed forces.

2. National Police

The National Police (Policía Nacional -- PN) was designed to protect life and to preserve the peace, inclusive of all normal police functions (i.e., traffic control, highway patrol, criminal investigation, missing persons). It also has some responsibility for counterinsurgency. It has a total force of 3,717 scattered in stations, substations, and guard posts; about 1,500 are stationed in Guatemala City.

Since the appointment of Colonel Manuel Francisco Sosa Avila as Director of the PN in early 1967, the organization has been filling its responsibilities more effectively, particularly its counterinsurgency role. The police are more active than previously and are cooperating with the army in forming special counterterrorist squads which operate clandestinely against leftist insurgents.

Since it was used as an auxilliary army under the dictator Jorge Ubico (1931-44), the directors and all ranking officers of the PN have been military personnel. Key divisions of the PN are under-staffed for the jobs they must perform. The PN is generally viewed with tolerance by the populace, in part, because members of the PN come from the poorer class and are poorly paid. Intensive efforts have been made to increase the professional capability of key officials, but the PN remains badly organized and administered. In recent years, certain improvements have been made. The traffic section has exhibited greater efficiency, and modern equipment and methods have replaced the previously inaccurate and incomplete police records system. Police organization has become more flexible and has been able to respond more effectively to new situations.

Although most modern police administrators consider foot patrols relatively expensive and ineffective, the PN is still organized primarily on the foot patrol principle. In 1964, however, the PN began purchasing patrol cars,

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reorganized the radio patrol section, and initiated a training course in a new system of mobile patrol for all radio patrol car commanders.

Approximately one-third of total personnel have had some riot-control training. They are capable of controlling small-scale riots and have some counterinsurgency capability. Their combat capabilities, however, are meager.

3. Judicial Police

The Judicial Police of 386 members has functions which theoretically differ little from those of the PN, and there is considerable friction between the two agencies. The Judicial Police recently acquired responsibility for Inter-pol (10 men), the Immigration Police (27 men) and all criminal investigations. Judicial Police agents are often employed to investigate and harass political opponents, so that this organization is considered by the public to be the least savory of the police services. Despite recommendations for abolition of the Judicial Police, each regime has found it expedient to retain it as an organization to carry out questionable and distasteful tasks.

4. Border Police

The Border Police or Treasury Police (Guardia de Hacienda) is a semimilitary policing body of 893 members responsible for normal border police functions, such as prevention of illegal border crossing and detection of contraband. It also collects tariffs and other revenues due to the government, provides guards for government and private banks, and supplements other police forces in emergencies. Its members receive no specialized training in customs law enforcement techniques, and the agency's record on seizing contraband is unimpressive. Its excessive use of fixed-post techniques, lack of equipment to impart mobility, and responsibility for enforcement of many other laws make its activities against smugglers little more than a token. Nevertheless, the Border Police is Guatemala's most respected police organization.

5. Intelligence Organizations

In the intelligence field, the army G-2 acts for all the armed forces and has responsibility for the normal functions of military intelligence and for the monitoring of subversive activities by exiles in Guatemala.

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A new intelligence organization has been established under President Mendez called The National Security Subversive Activities Group (SNAS). It is responsible for investigating subversive activities including Communist guerrilla operations. With a strength of 12 officers and 10 support personnel, it is under the jurisdiction of the chief of the President's Military Staff. It relies on the Judicial Section of the National Police for carrying out any arrests, searches, and seizures which are necessary as the result of its investigations.

The Guatemalan intelligence services are limited by lack of funds, equipment, training, and proper leadership, and by continual personnel changes and reorganization. Outside the capital district they are thinly distributed. The targets of the services are frequently the political opposition or dissident factions within the government which appear to threaten the regime, rather than Communists or other subversives.

F. Small Arms Found in Guatemala

1. Arms Held by Civil and Military Forces

<u>Weapon Type</u>	<u>Caliber</u>	<u>Country of Origin</u>
Revolver, Smith & Wesson	.38 cal.	US
Pistol, Smith & Wesson	.38 cal.	US
Carbine, M-1	.30 cal.	US
Rifle, M-1	.30 cal.	US
Rifle, Enfield	.303 cal.	Canada
Rifle, Enfield	.303 cal.	UK
Rifle, Mauser	7.92mm	Germany
Rifle	7mm	Poland
Submachine Gun, Madsen, M-53	9mm	Denmark
Submachine Gun, Madsen, M-1950	9mm	Denmark
Submachine Gun	9mm	Poland
Light Machine Gun, Hotchkiss	7mm	France
Machine Gun	.30 cal.	US
Machine Gun	.50 cal.	US

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~~SECRET~~2. Arms Held by Insurgent Forces

Weapon Type	Caliber	Country of Origin
Revolver	.38 cal.	US
Pistol	.38 cal.	US
Pistol	.45 cal.	US
Carbine, M-1	.30 cal.	US
Rifle, M-1	.30 cal.	US
Rifle, M-2	.30 cal.	US
Rifle, Armalite	.22 cal.	US
Rifle, Enfield	.303 cal.	UK
Rifle, Mauser	7mm	Germany
Rifle, Mauser	7mm	Spain
Rifle, Mauser	7.62mm	Mexico
Rifle, Mauser	7.92mm	Germany
Machine Pistol, MP-40, Schmeisser	9mm	Germany
Submachine Gun, Steyr-Solothurn	9mm	Germany
Submachine Gun, Reising	.45 cal.	US
Submachine Gun, Thompson, M1A1	.45 cal.	US
Submachine Gun, Schmeisser	9mm	Germany
Submachine Gun	9mm	Czechoslovakia
Submachine Gun	9mm	Sweden
Submachine Gun, Madsen	9mm	Denmark
Machine Gun, M-34	7mm	Mexico

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1. CIA. NIS 71, Guatemala, "General Survey," Aug 1965. S/NFD.
2. CIA. NIS 71, Guatemala, sec 56, "Intelligence and Security," Feb 1967. S/NFD.

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~~SECRET~~X. Survival FactorsA. General

The physical environment of Guatemala generally favors survival efforts. Fruits and vegetables, both wild and cultivated, are plentiful, and wild game and birds are relatively abundant. The potentially dangerous animals of Central America, such as jaguars and crocodiles, are few and usually can be avoided. There are some poisonous snakes, as well as toxic fruits and irritant plants. Water is plentiful, except during the dry season in the limestone areas of the north. Almost all drinking water, however, should be treated. A wide variety of pestiferous, disease-bearing, and poisonous insects, along with low levels of sanitation among the populace, comprise the greatest hazards. In addition, a climate that varies between hot in the lowlands and cool and even cold in the highlands can cause physiological stresses. During the rainy season both torrential downpours and prolonged light rains disrupt transportation and cross-country movement. Contact with the population is virtually unavoidable, except in the thinly settled north.

B. Food and Water1. Animals

Small game are numerous throughout much of the country, and squirrel or rabbit often supplement the diet of a large, undernourished segment of the population. Many of the indigenous animals are well known in North America -- squirrels, foxes, rabbits, deer, raccoons, peccaries, and opossums; others are typical to Guatemala -- tapirs, monkeys, armadillos, pacas, agoutis, and kinkajous.

Meat from cats and canines, although edible, is usually unsavory. The meat of most other animals, however, is palatable and in some cases quite tasty. The only inedible snake in Guatemala is the sea snake; other varieties, even if poisonous, can be eaten if the venom sacs are removed. Most lizards are edible, and the iguana, which sometimes grows to a length of 6 feet, is hunted for food. The variety of birdlife is virtually unlimited, ranging from tiny hummingbirds to such large waterfowl as herons and pelicans. The flesh of all birds is edible if boiled for a minimum of 20 minutes prior to eating. Most rural families raise domestic fowl and animals, usually chickens and pigs. They tend to be scrawny, however, and not worth the risks involved in poaching. Many lakes and

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streams in Guatemala contain a ready supply of fish.

2. Fruits and Vegetables

Plants, shrubs, and trees with edible fruits, leaves, roots, and tubers are abundant in both the wild and cultivated state (see Table 2). Food plants are found most commonly in clearings, in abandoned gardens, and along stream margins and swamps; they are least common in dense woodlands. In general, root crops provide the most food value, and they have the advantage of keeping for relatively long periods without spoiling. Fruits that grow on vines along the ground provide variety to this generally starchy fare. Palm trees usually have two edible parts -- the palmito (palm heart or palm cabbage) and a seasonal fruit or nut. Fruits that grow on trees are available in season. Edible leaves are usually slightly acid and add a healthful and tasty element to the diet.

Corn is the staple food in Guatemala, and small cornfields, called milpas, dot the rural countryside. Within these cornfields beans, squash, and other vegetables are intercropped. Unfortunately, intestinal infections may be acquired by eating this produce since nightsoil is commonly used as a fertilizing agent. Furthermore, pilfering would be risky as farm dwellings are usually situated in the middle of the cultivated plots.

3. Water

An adequate supply of water is the most essential element of survival. An individual in good health, even at rest, requires a minimum of 1 quart daily. With fever, exercise, or hot weather, larger amounts are essential.

Water is available almost everywhere in Guatemala because rainfall is generally adequate throughout the year. Arid conditions prevail along the upper reaches of the Río Motagua valley. In El Petén department underground drainage, coupled with a decrease in rainfall between January and April, rapidly lowers water levels, especially in the northeastern section of the department.

All the usual sources of water such as lakes, streams, village fountains and taps should be considered contaminated. In El Petén, even the water in aguadas -- the large rain-collecting depressions in the ground thought to have been built by ancient Mayas -- should be suspect, although there may be no human habitation in the area.

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The fruits, growing tips, leaves, stems, and buds of many plants contain water or water substitutes. Certain bamboos and lianas store rainwater and may be tapped for a clear, cool drink. Leaves of various members of the pineapple family (bromeliads) form basins which catch and hold up to several pints of rainwater. The trunks of young banana trees contain a slightly astringent liquid that is suitable for drinking. The thick stems of the wild grape contain an abundant sap which is a satisfactory and safe substitute for water. The milk in the green fruit of the coconut palm, common along coastlines, is a refreshing drink. The milk of ripened coconuts, however, contains an oil that may cause diarrhea if taken in large quantities. It can be drunk without harmful effects by allowing it to stand; the oil will separate and can be drained off.

C. Environmental Hazards

1. Plants

Poisonous plants in Guatemala (see Table 3) include those that poison on contact and those that are toxic when taken internally. Those that are poisonous on contact usually have either a toxic element in the sap or have spiny leaves that penetrate the skin. Touching one of these plants results in dermatitis accompanied by pain, itching, swelling, or blistering, often lasting up to several days. Exposure to these plants rarely proves fatal, although temporary blindness may result if the eyes come in contact with the toxic element.

While there is no foolproof method for determining whether or not a plant or fruit will be harmful when eaten, certain general rules may be applied. If it has a milky sap, an unpleasant odor, or a disagreeable taste, consider it toxic. If it passes all three of these tests, then peel it and boil it, changing the water three or four times. Next, eat a very small portion. If there are no ill effects after 3 hours, presume the food is safe to eat.

2. Animals

A careful traveler need not fear the wild animals of Guatemala but he should be respectful of some of them. Jaguars and pumas, while capable of inflicting fatal injuries, are not numerous, and unless molested or cornered they will avoid human contact. Wild peccaries in large droves are apt to charge an unwary traveler and cause serious injury with their tusks. Vampire bats, many of them rabid, are

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prevalent in certain areas. For this reason, it is advisable to keep body extremities covered when sleeping, and, when possible, avoid sleeping in caves where bats may be found. Armadillos, opossums, raccoons, and certain species of rats and mice can be reservoirs of Chagas' disease. Both howler and spider monkeys may harbor jungle yellow fever. The domestic dog, common throughout the Guatemalan countryside, is scrawny, underfed, and sometimes rabid, especially toward the end of the dry season.

Crocodiles in swamps and along waterways are dangerous, but out of water they are cumbersome. The Mexican beaded lizard, found in dry sections of northern Guatemala, is poisonous.

Poisonous snakes usually are not encountered. Nevertheless, unless positive identification can be made, consider all snakes poisonous. In traveling across country, tuck trousers into high boots, keep hands out of holes and rock crevices, and be alert when climbing trees.

There are five groups of poisonous snakes in Guatemala. The tropical rattlesnake is found in dry, hilly country. It averages 5 feet in length, is highly venomous, and may be aggressive. The bushmaster, growing up to 11 feet in length, lives in forested areas at low altitudes. Although this environment is found on the Caribbean and Pacific Lowlands, the bushmaster has been reported only in El Petén department. The fer-de-lance group contains half a dozen poisonous varieties, ranging in length from 3 feet to 9 feet. Some of the smaller varieties, known as palm vipers, live in trees, especially at the base of the leaves of the palm tree. The larger snakes are ground snakes and are common in canefields or around dwellings where they come to catch rats. The coral snake, averaging 2 feet in length, is widely distributed throughout Guatemala. It lives underground most of the time, is not aggressive, and bites by remaining flat on the ground and twisting its head to one side if it is picked up or stepped upon. Poisonous sea snakes are found only in Pacific waters, but none have been known to attack a man swimming.

3. Insects

Insect pests are widespread in Guatemala. At the very least, they can be annoying, especially when temperature and humidity are high. At their worst, the bite of some, such as scorpions and certain spiders, is poisonous and occasionally fatal. Many are carriers of disease. Lice harbor typhus; two species of mosquitoes

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host malaria; the sandfly is a carrier of leishmaniasis (infection characterized by ulcerating skin); reduviids (cone-shaped bugs) bear Chagas' disease. Of these, only malaria has a significant incidence rate. It occurs throughout the country, although it is most prevalent between June and December in the Lago de Izabal area, the Pacific lowlands, and southwestern El Progreso department.

A particular hazard in El Petén is the so-called "chicle fly," which tends to bite the nose or ear of its victim. If this bite is not treated the flesh will rot away and result in permanent disfigurement. Ticks are pestiferous the year around and are especially noticeable in the dry season. When walking through grass and bushes it is helpful to swing a stick through the brush ahead to knock ticks to the ground. The so-called "blinding fly," found along the lower western foothills of the Central Highlands, plays host to a dangerous wormlike parasite. If the fly bites the back of the head, larvae of the parasite are deposited; when the larvae hatch they penetrate to that part of the brain affecting the eyes and cause blindness. The nigua is a flea that deposits its eggs under toenails. If these eggs are allowed to hatch the toe becomes infected and may have to be amputated.

4. Climate

The hot, humid climate of the Caribbean and Pacific lowlands and of El Petén is enervating and, for one not accustomed to such conditions, might create imposing physiological barriers. At higher elevations temperatures are more invigorating and, at night, cool enough to warrant warm clothing and shelter. Above 5,000 feet, where frosts are common, warm clothing and adequate shelter are constant necessities.

Clothing and shelter sufficient to provide protection from heavy rains is necessary throughout Guatemala, particularly along exposed slopes in the northeast and the south. During the rainy season, when flooding, mudslides, and earth slumps are apt to occur, cross-country movement becomes difficult if not impossible. Thunderstorms are most common between May and September. Full-blown hurricanes are a rarity, although the remnants of some tropical cyclones occasionally move inland from the Caribbean.

Locally, strong winds during the day in the Central Highlands are dangerous, particularly on Lago de Atitlán, where they create a turbulence on the water that makes small boat travel very hazardous. Indians of the lakeshore villages navigate the lake between 0300 and 0700 hours to avoid this danger.

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D. Cultural Factors

Under normal conditions there is no reason to fear any segment of the population of Guatemala. The Indian usually remains aloof from any but his own kind. He is very religious, however, and his crude and makeshift shrines, scattered throughout the Indian areas, are sacred symbols which an outsider should leave alone. Ladinos are perhaps more sensitive than Indians to the presence of outsiders, but normally they will not challenge strangers. North American tourists, businessmen, and scientists have been present in Guatemala for many years, and they ordinarily move at will along well-traveled routes and mingle with the crowds in the marketplaces. Guerrilla activity in recent years in the departments of Izabal and Zacapa may have made residents there wary of strangers. While most Guatemalans do not own firearms, every peasant has an axe and a machete which he can wield with equal proficiency either as a tool or as a weapon.

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E. Principal Diseases Encountered in Guatemala

Carrier	Disease	Distribution	Prevention	Treatment	Comments
Infected humans	Influenza	Widespread	Avoid crowded conditions; inoculation	Rest, aspirin or APC	Not a major problem unless epidemic develops
"	Yaws	Rural areas	General cleanliness; penicillin	Penicillin	Not very wide-spread
Mosquitoes	Malaria	Widespread over 95 percent of Guatemala	Mosquito repellent and primaquine	Chloroquine diphosphate	Only two species of mosquitoes are responsible for malaria in Guatemala; most prevalent is vivax malaria
"	Yellow fever	No longer observed in Guatemala but potentially dangerous	Inoculation, mosquito repellent	Essentially none	
Fleas	Onchocerciasis	Mountainous areas	DDT powder in clothing	Hextrazan	The human flea is the suspected vector, but this has not been proven
Lice	Epidemic typhus	Sporadic	Inoculation	Chlorte-tracycline	Epidemics rarely occur

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Carrier	Disease	Distribution	Prevention	Treatment	Comments
Reduviid or assassin bug	American trypanosomiasis (Chagas' disease)	Widespread	Insect repellent; DDT in quarters	Essentially none	Disease usually becomes chronic with low death rate
Sandfly	Cutaneous leishmaniasis	General, especially in El Peten	Insect repellent	Infiltration of ulcers with quinacrine; sodium antimony gluconate injections	
Unclean food and water	Bacillary dysentery	Widespread	Clean food and water; sulfaguanidine if exposed	Chlortetracycline or sulfadiazine	
"	Amoebic dysentery	Widespread	Clean food and water	Diodoquin	
"	Typhoid and paratyphoid fevers	Fairly widespread	Inoculation	Chloromycetin	Outbreaks are sporadic
"	Helminthic (worm) infection	Widespread	Clean food and water	Tetrachloroethylene	
Infected animals	Rabies	Fairly widespread	Avoid close contact with dogs, bats, and wild rodents	Anti-rabies vaccine series	Evacuate suspect case as soon as possible

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Table 2
Selected Edible Plants

<u>Spanish Name</u>	<u>English Name</u>	<u>Latin Name</u>	<u>Remarks</u>
Aceituno	Paradise-tree	Simaruba glauca	Small to medium-sized tree, cultivated at low elevations. Black fruit similar to olive.
Anona (guanábana)	Custard-apple	Annona reticulata	Small tree, common to coastal areas. Heart-shaped, brownish-yellow fruit.
Árbol del pan	Breadfruit	Artocarpus altilis	Small to medium-sized tree, cultivated at low elevations. Large, round, green fruit.
Capulin (cereza)	Wild cherry	Prunus capuli	Medium-sized tree, cultivated or wild at upper elevations. Small, reddish-purple fruit.
Chucté (shucté, coyó)	Avocado	Persea americana	Medium-sized tree, cultivated or wild.
Coco	Coconut	Cocos nucifera	Unbranched palm tree 60 to 90 feet tall, common to coastal areas. Palmito and coconut are nutritious; milk inside coconut provides cooling drink.
Granadilla	Passion vine	Passiflora ligularis	Climbing vine, at upper elevations. Yellow-orange, egg-shaped fruit.
Guayabo	Guava	Psidium guajava	Bush or small tree, cultivated or wild at low elevations. Round, yellowish fruit with musky odor.
Higo	Wild fig	Ficus sp.	Bush or small tree. Round, soft fruits from all species eaten raw.

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Table 2 (Continued)

<u>Spanish Name</u>	<u>English Name</u>	<u>Latin Name</u>	<u>Remarks</u>
Hrisquil	Chayote	Sechium edule	Vine. Young shoots, tender branches, and tuberous roots edible, as well as squashlike fruits about 8 inches long. As many as 600 fruits on one vine; can be eaten raw or cooked.
Izote	Spanish-bayonet	Yucca elephantipes	Stiff, short-trunked plant. Bell-shaped flower edible raw or cooked.
Jicama	Yam-bean	Pachyrhizus erosus	Soft-stemmed vine. Roots eaten raw; young pods may be cooked and eaten like string beans.
Jocote (ciruela, mombin)	Spanish-plum	Spondias purpurea	Large bush or small tree, at low to middle elevations. Yellow to dark red fruit resembles plum.
Mamey	Mammeapple	Mammea americana	Medium-sized to large evergreen tree. Fruit similar to apricot; consume moderately, as pits are toxic and fruit pulp may be toxic to some persons.
Mango	Mango	Mangifera indica	Large evergreen tree. Large yellowish fruit with slight taste of turpentine. Sap may cause rash on sensitive skin.
Manzanita	Thornapple	Crataegus pubescens	Large bush or small tree with long thorns, cultivated or wild at upper elevations. Fruit similar to small yellow apple.
Marañon	Cashew	Anacardium occidentale	Medium-sized evergreen tree. Kidney-shaped nut grows at end of yellowish fruit; both edible, but nut must be roasted to remove poisonous volatile oil from shell; even fumes from roasting nuts can be irritating. See Figure 72.

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Table 2 (Continued)

<u>Spanish Name</u>	<u>English Name</u>	<u>Latin Name</u>	<u>Remarks</u>
Miltomate	Groundcherry	Physalis sp.	Low, soft-stemmed plant common to abandoned gardens. Green fruit resembles small tomato.
Ñame	Yam	Dioscorea sp.	Vine. Large underground tuber resembling sweet potato; cook well before eating.
Nanche	Nance	Byrsonima sp.	Bush or small tree, common to dry places at low elevations. Small, round yellow berry.
Nispero	Sapodilla	Achras zapota	Medium-sized evergreen tree. Ripe fruit has brown skin and yellowish pulp; resembles Irish potato. Sap is chicle of chewing gum. See Figure 73.
Ojoche (ojuste)	Breadnut tree	Brosimum alicastrum	Large tree. Round yellowish fruit may be eaten raw, stone and all.
Otó	Primrose malanga	Xanthosoma violaceum	Herbaceous plant. Tuberous roots and leaves edible after thorough cooking to remove toxic properties.
Pacaya	Pacaya	Chamaedorea sp.	Small palm tree. Male flower clusters and white pith of stem edible.
Papaya	Papaya	Carica papaya	Small evergreen tree. Large green or orange fruit grows directly from trunk near top; unripe fruit can be cooked as vegetable. Milky sap from unripe fruit may blind one. See Figure 74.
Piña	Pineapple	Ananas sativus	Herbaceous plant. Rough-skinned fruit grows close to ground and is topped by stiff sharp-edged leaves.

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Table 2 (Continued)

<u>Spanish Name</u>	<u>English Name</u>	<u>Latin Name</u>	<u>Remarks</u>
Piñanone	Ceriman	Monstera deliciosa	Climbing vine, common to wet forests. Large green fruit the size of corn-cob; eat raw only when fully ripe, as needlelike crystals on immature fruit will irritate mouth.
plátano	Plantain	Musa paradisiaca	Plant about 20 feet tall. Fruit resembles banana but bigger. Edible raw, but usually cooked.
Sunzapote	Sansapote	Licania platypus	Large tree, common to low elevations. Large fruit with brown rind and stringy flesh.
Tamarindo	Tamarind	Tamarindus indica	Large tree, common to low elevations. Brown pods edible raw; young leaves and flowers cooked and eaten as greens.
Uva de playa	Seagrape	Coccoloba uvifera	Bush or small tree common to coastlines. White or reddish grapelike fruit.
Yuca	Manioc	Manihot esculenta	Shrub or small tree. Large, fleshy rootstocks contain much starch; ground roots must be cooked for at least 1 hour to remove toxic prussic acid. See Figure 75.
Zapote	Sapote	Calocarpum mammosum	Large tree, cultivated or wild. Rounded fruit, 4 to 8 inches in diameter, has brown skin and one large seed.

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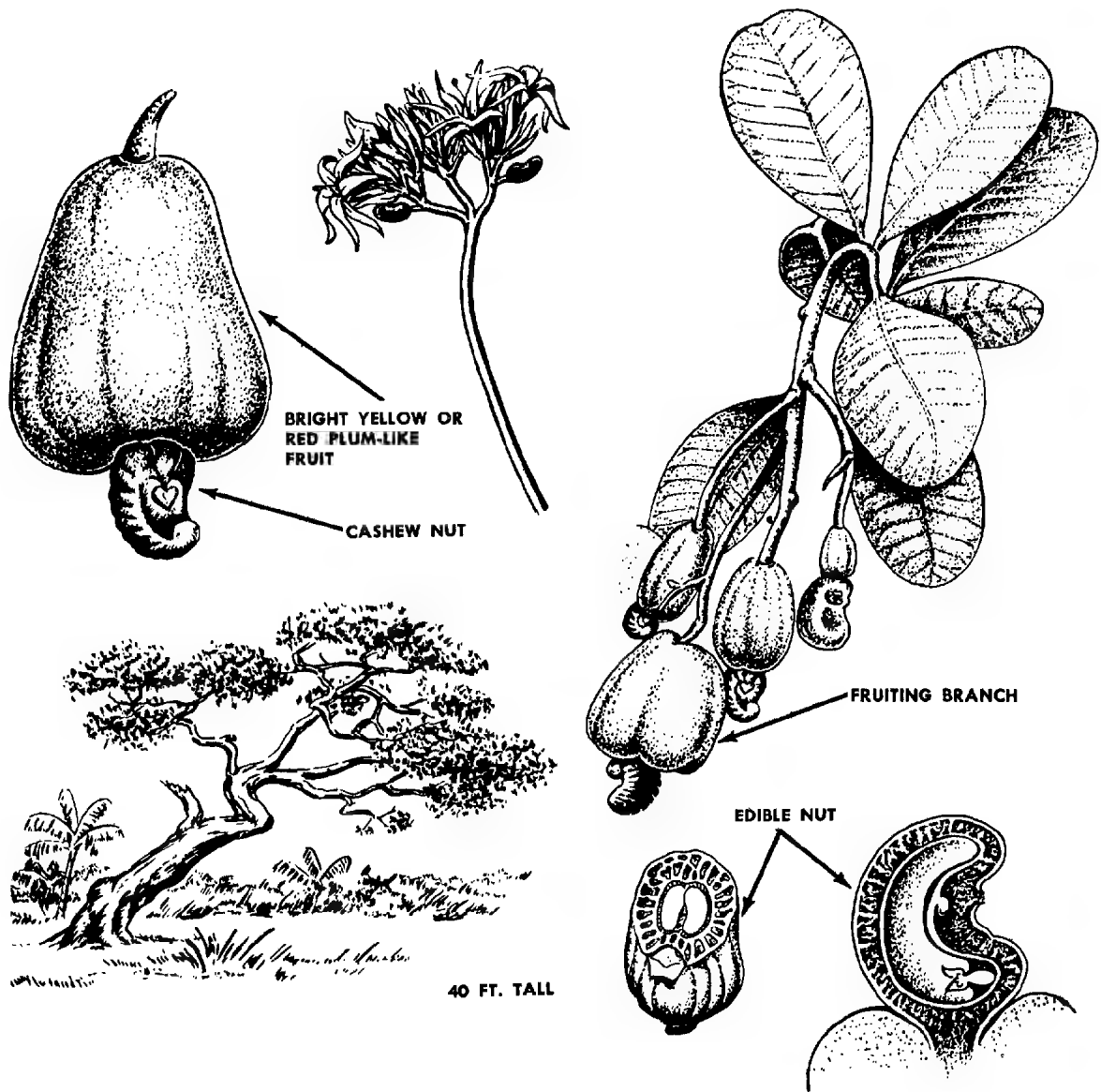


Figure 72. Marañon or Cashew.

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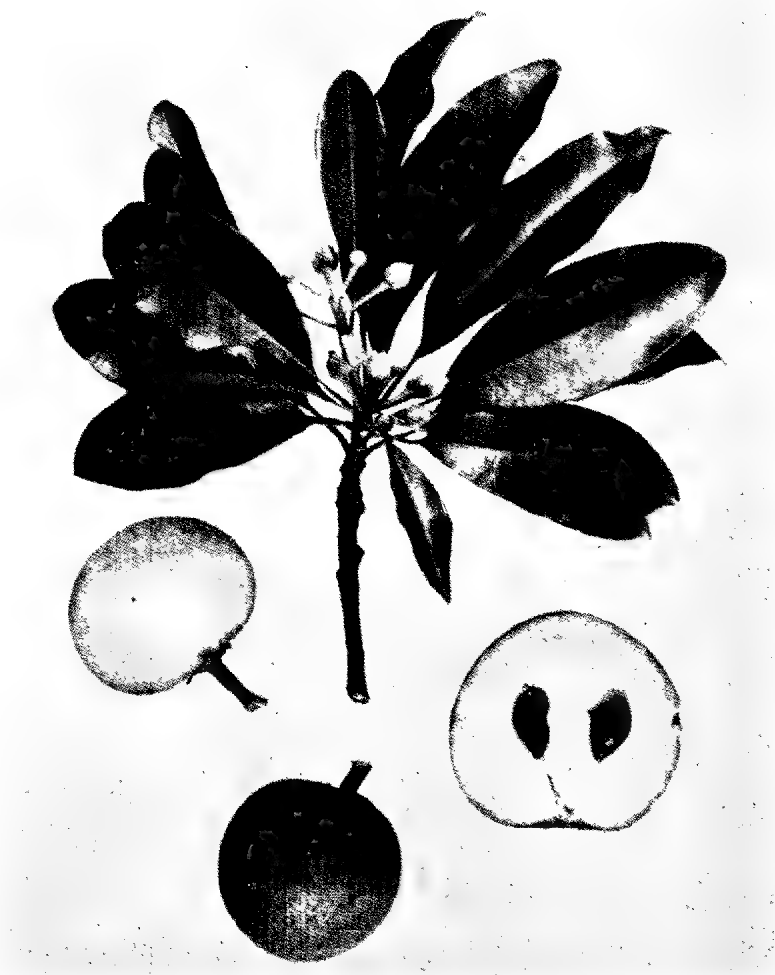


Figure 73. Nispero or Sapodilla.

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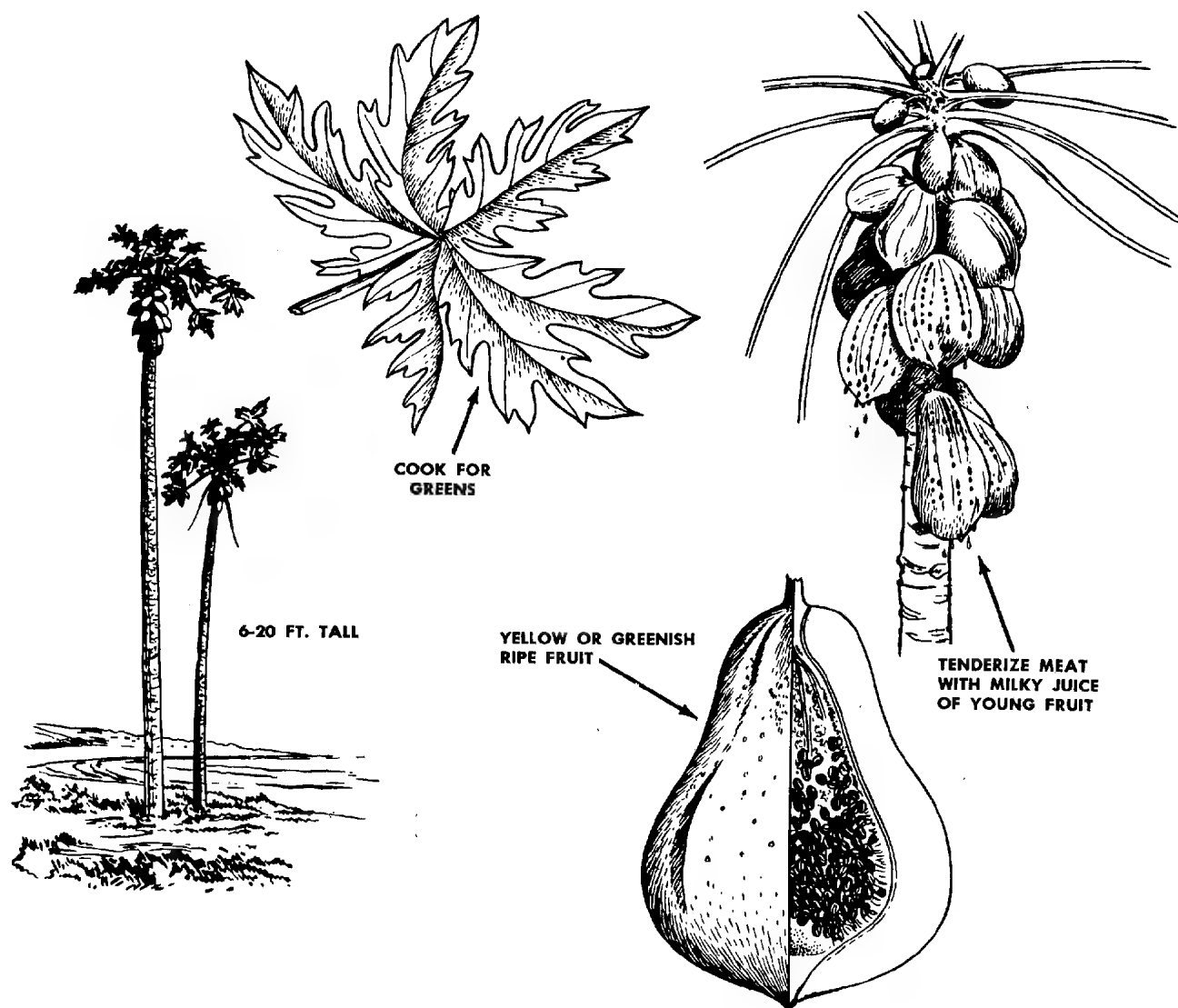


Figure 74. Papaya.

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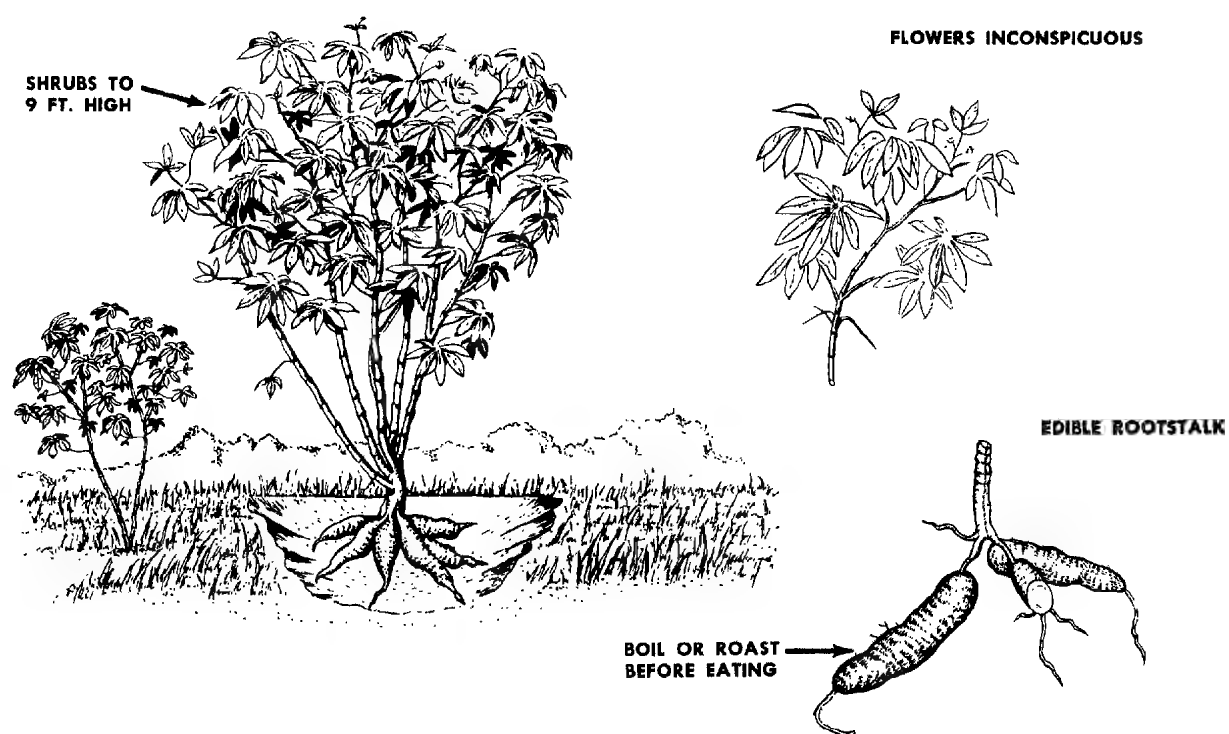


Figure 75. Yuca or Manioc.

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Table 3
Poisonous Plants

<u>Spanish Name</u>	<u>English Name</u>	<u>Latin Name</u>	<u>Remarks</u>
Amché	Poison sumac	Rhus striata	Shrub or small tree, at upper elevations. Has bright red leaf and small white flower; leaves or sap cause blistering or swelling that may last for weeks.
Chichicaste	Stinging spurge	Cnidoscolus urens	Bush or small tree, at lower or middle elevations. Stiff hairs covering plant cause pain, inflammation, and numbness for day or more.
Ciega vista		Croton ciliatoglandulosus	Bush about 3 feet high, in underbrush of dry localities. Covered with hairs that cling to hand if touched, and can inflame eyes.
Jabillo	Sandboxtree	Hura crepitans	Large tree, at lower elevations. Sap is toxic, seeds contain toxic oil, and milky juice from bark causes skin ulcers. See Figure 76.
Jacinto	Chinaberry	Melia azedarach	Small to medium-sized tree. Small whitish berry very toxic.
Manzanillo	Manchineel	Hippomane mancinella	Small tree, in dense thickets along shoreline. Has small green flower and fruit like small green apple. Sap severely blisters skin, and smoke from burning wood may injure eyes.
Moco tinto	Thyme leaf	Coriaria thymifolia	Bush up to 6 feet tall, at upper elevations. Has fernlike leaves and small reddish-purple flower. Small, reddish-purple berry very toxic.

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Table 3 (Continued)

<u>Spanish Name</u>	<u>English Name</u>	<u>Latin Name</u>	<u>Remarks</u>
Otó de lagarto	Dumb cane	Dieffenbachia longispatha	Small plant, common to lowlands and wet ground. Has offensive skunklike odor when cut. Milky sap severely blisters skin.
Pica-pica	Cowitch	Mucuna pruriens	Small bush, common to lowlands. Stiff hairs on hard pods cause persistent itching and skin irritation, as well as serious injury to eyes.
Reina de la noche	Devil's-apple	Datura arborea	Plant, at elevations above 3,000 feet. Entire plant toxic.
Ricino	Castor bean	Ricinus communis	Cultivated plant with widespread distribution. Seeds toxic.
Solimán	Guao	Comocladia sp.	Bush or small tree with few branches and often with spiny leaves. Sap causes blistering and prolonged skin inflammation.
Yerba mala	Poison spurge	Euphorbia continifolia	Bush or small tree, at lower elevations. Has small white flower. Milky sap blisters and inflames skin.

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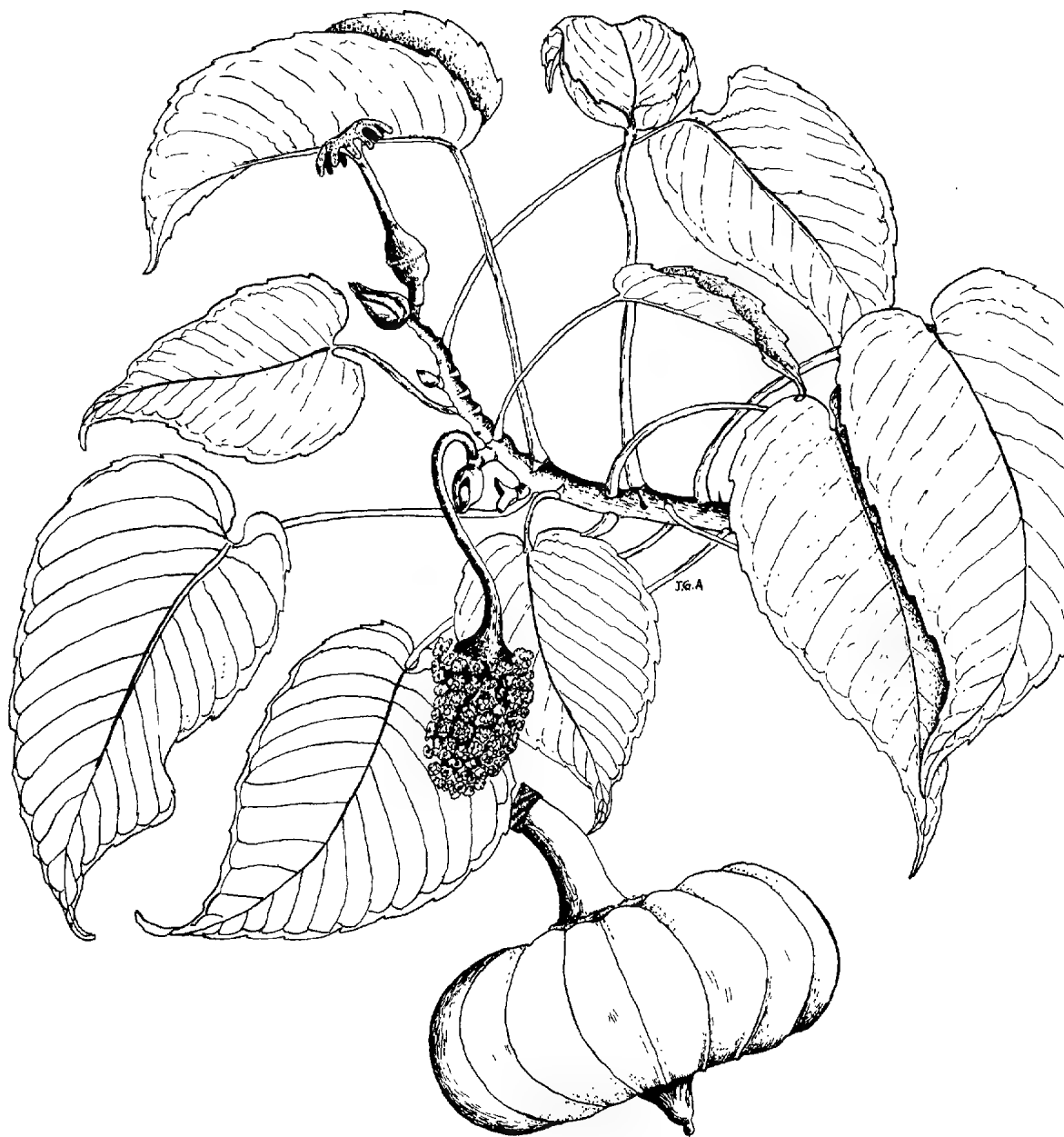


Figure 76. Jabillo or Sandboxtree.

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Appendix A

Recommended Maps

Except for the northern part of the country, Guatemala is well covered by large-scale topographic maps. Approximately 155 AMS 1:50,000 topographic sheets cover all of the country but El Petén department, and practically the entire country is covered by 11 AMS 1:250,000 topographic sheets. Many tracks and trails in El Petén department are shown with only approximate alignments on the 1:250,000 sheets. Cultural and physical features elsewhere are depicted with sufficient accuracy and adequate detail for most purposes.

Two USAF Operational Navigation Charts (ONC's) provide air chart coverage for Guatemala at a scale of 1:1,000,000. While terrain rendering on these charts is striking and useful for gaining a general impression of the country's topography, it is misleading in detail in many areas.

1. Army Map Service, Guatemala, 1:50,000, Series E754, various dates, most subsequent to 1964.

2. Army Map Service, Guatemala, 1:250,000, Series E503, 1960-1966. Sheets ND 15-3, ND 15-4, ND 15-7, ND 15-8, ND 15-12, ND 16-1, ND 16-5, NE 15-12, NE 15-16, NE 16-9, NE 16-13.

3. Aeronautical Chart and Information Center, USAF Operational Navigation Chart (ONC), 1:1,000,000. Sheets ONC J-25 (1964) and ONC K-25 (1965).

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APPENDIX B

RECOMMENDED FILMS

1. Science of Spying. Interview with guerrilla leader Yon Sosa. NBC/TV, 1965, 16 millimeter, sound, black and white, 13 minutes. CIA film V6487.
2. Military Civic Action in Guatemala. Signal Corps, 1963, 16 millimeter, sound, color, 23 minutes. CIA film S6612.
3. Guatemala on the Verge. NBC/TV, Chet Huntley, 1962, 16 millimeter, sound, black and white, 30 minutes. CIA film R6453.
4. Guatemala: Nation of Central America. Encyclopedia Britannica Films, 1960, 16 millimeter, sound, black and white, 19 minutes. CIA film S6793.
5. Republic of Guatemala. International Film Bureau, 1956, 16 millimeter, sound, color, 23 minutes. CIA film V6011.
6. Hill Towns of Guatemala. Coordinator of Inter-American Affairs, 1942, 16 millimeter, sound, black and white, 10 minutes. CIA film H6518.

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